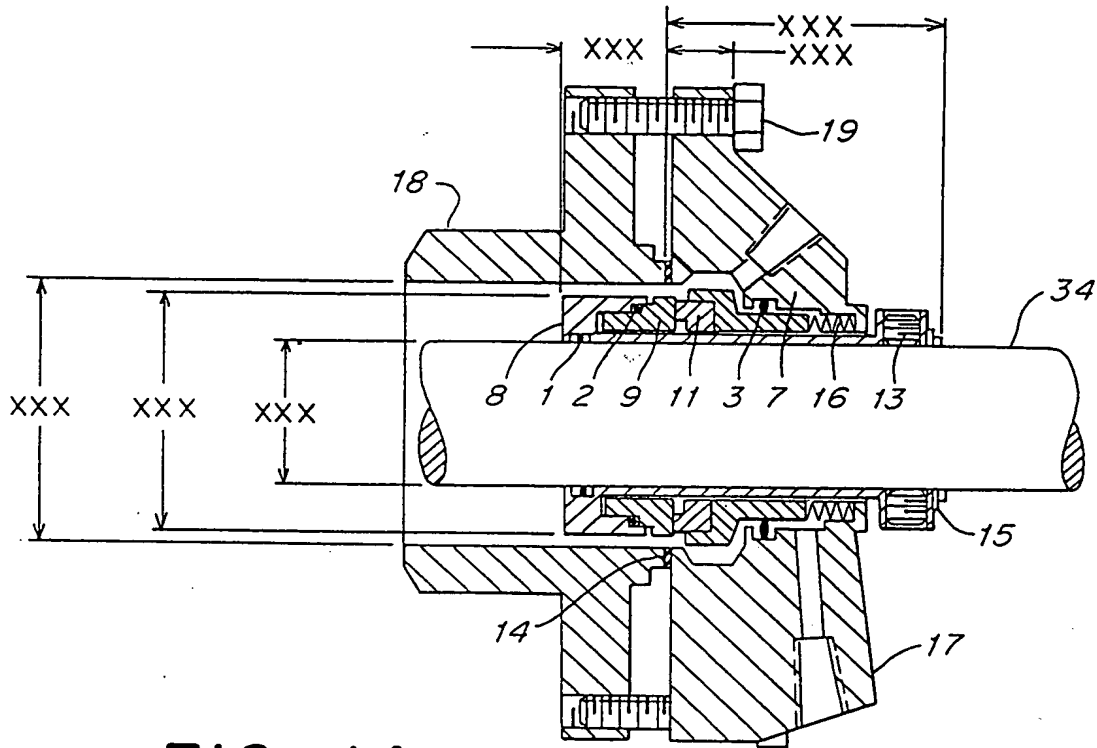
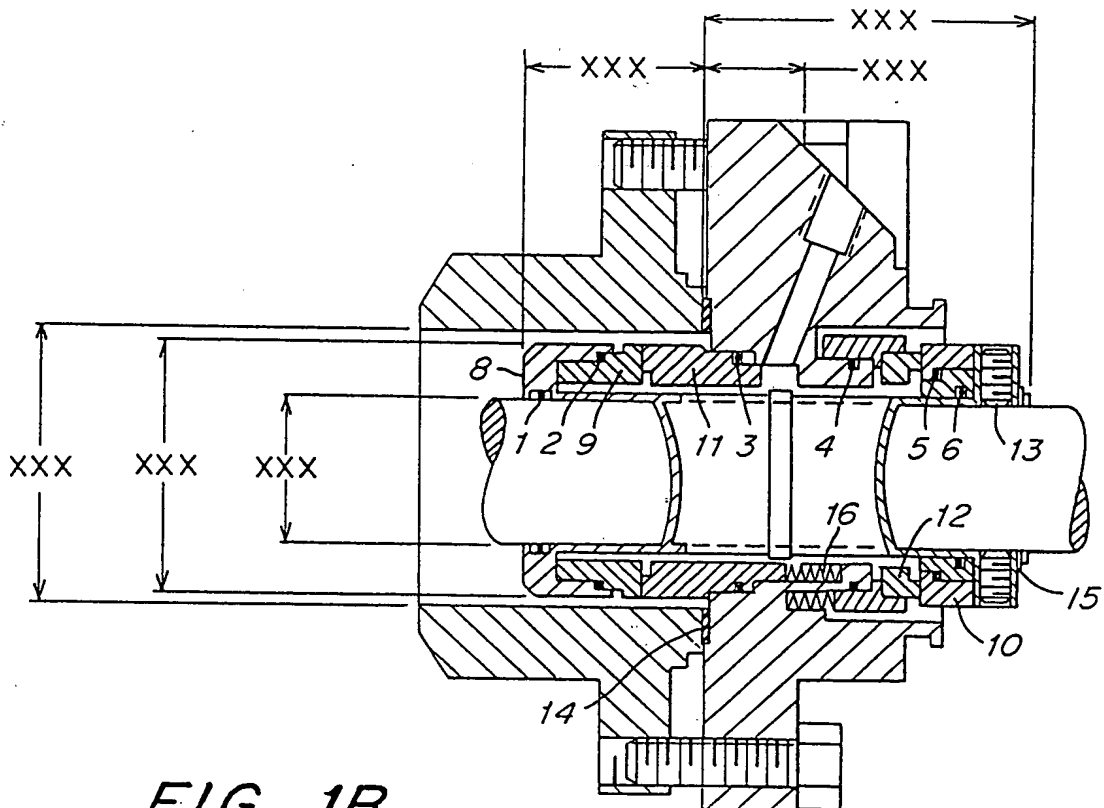


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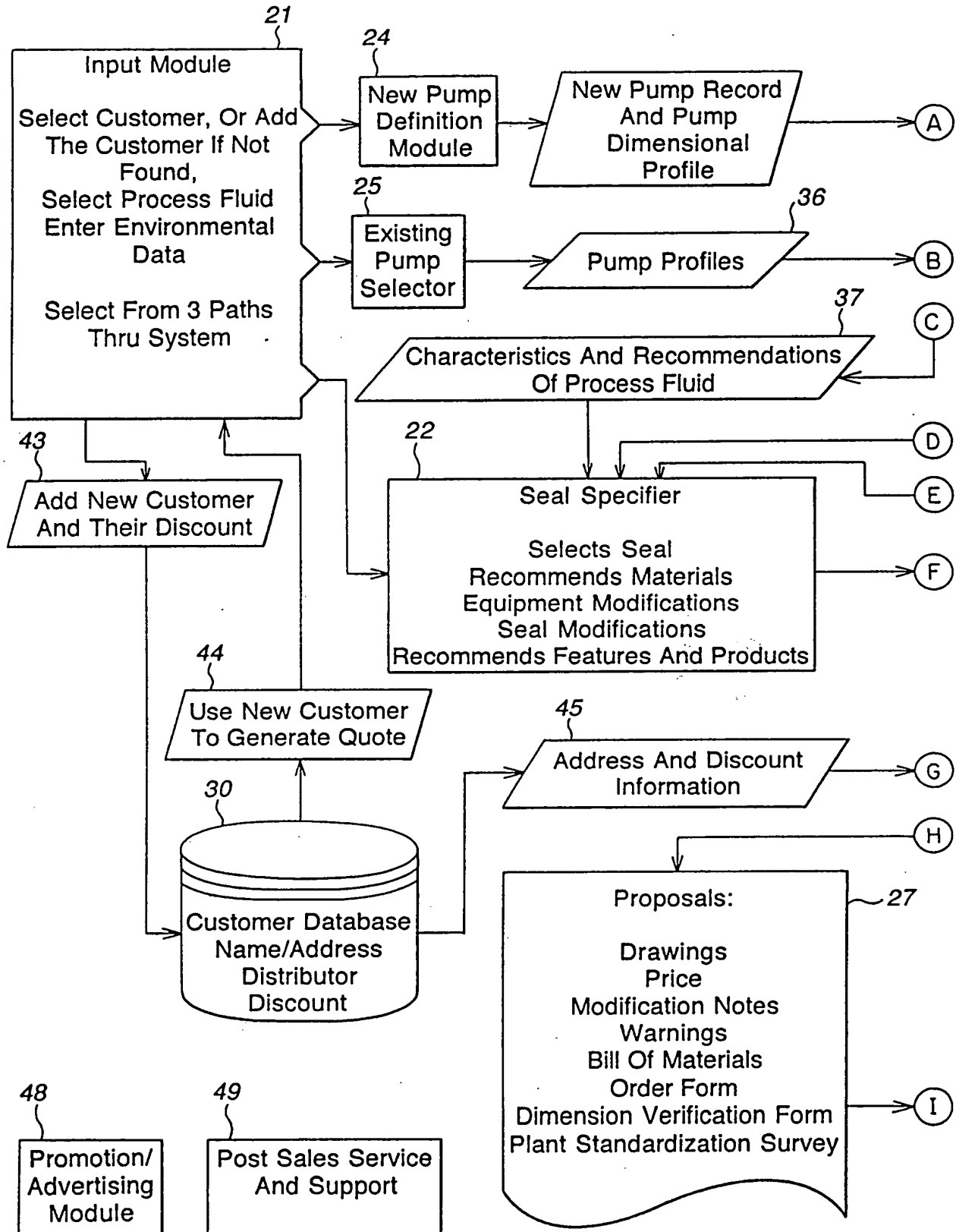
*FIG. 1A*



*FIG. 1B*

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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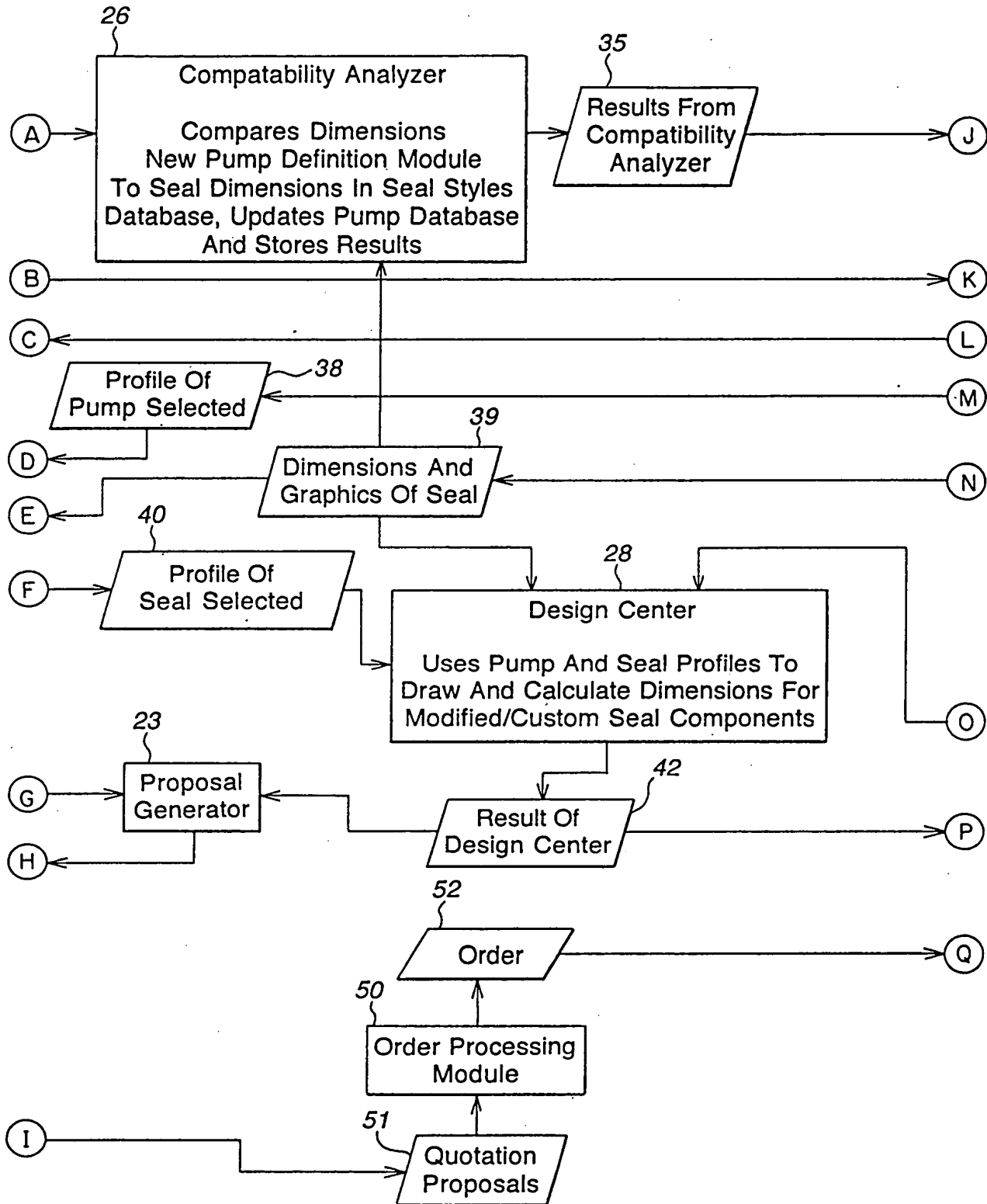
20

FIG. 2A

Fig. 2A	Fig. 2B	Fig. 2C
---------	---------	---------

Fig. 2

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20

FIG. 2B

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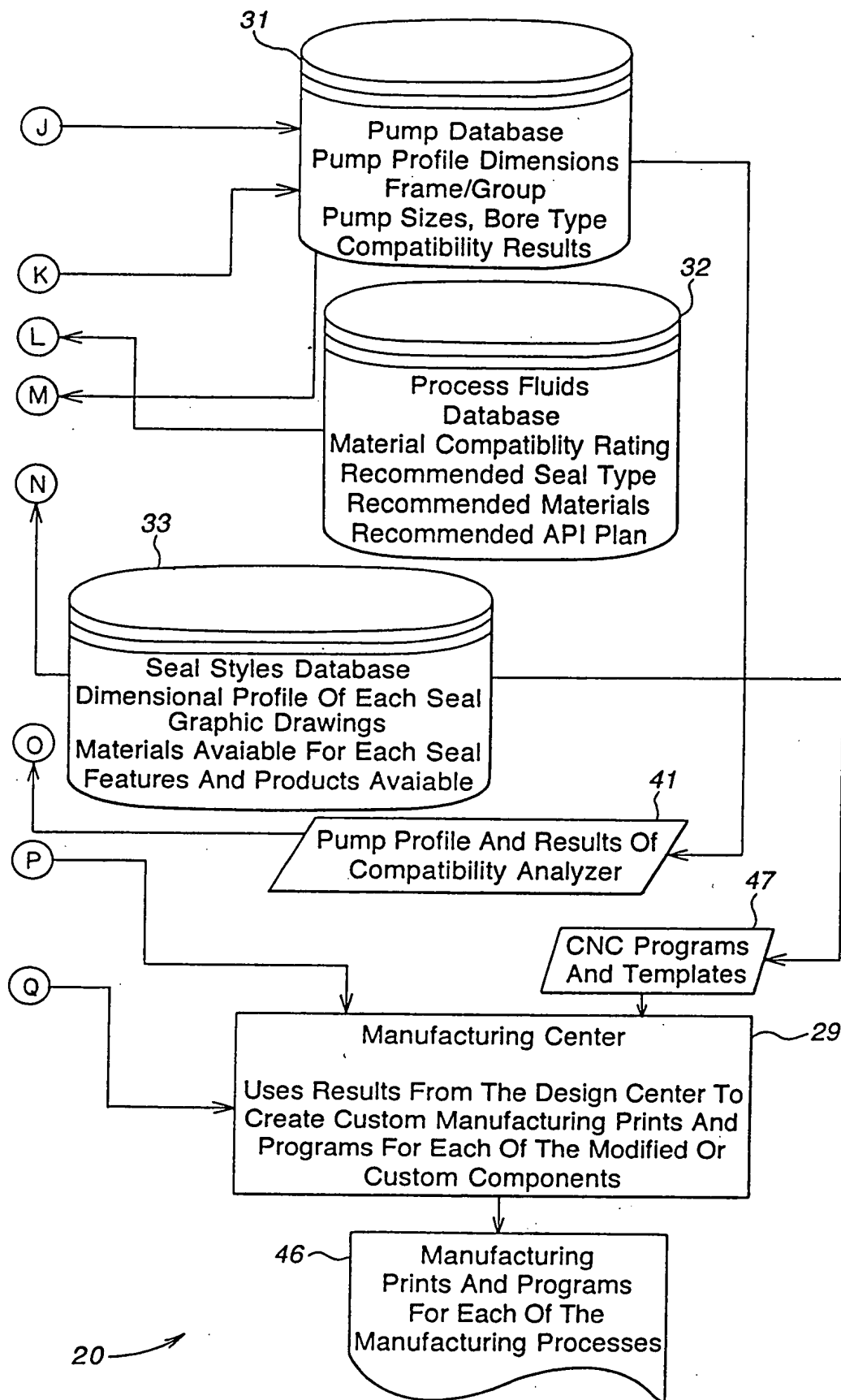


FIG. 2C

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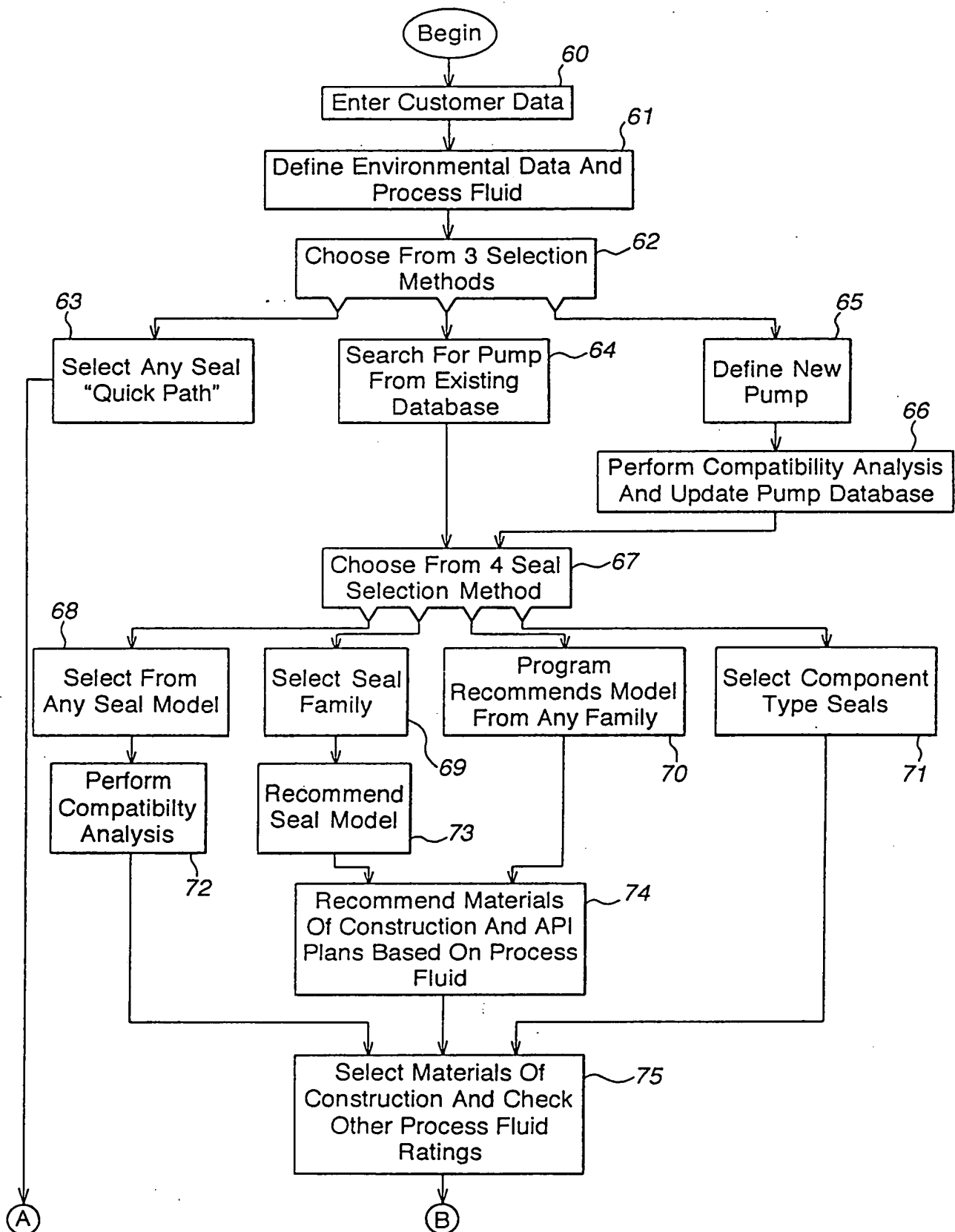


FIG. 3A

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

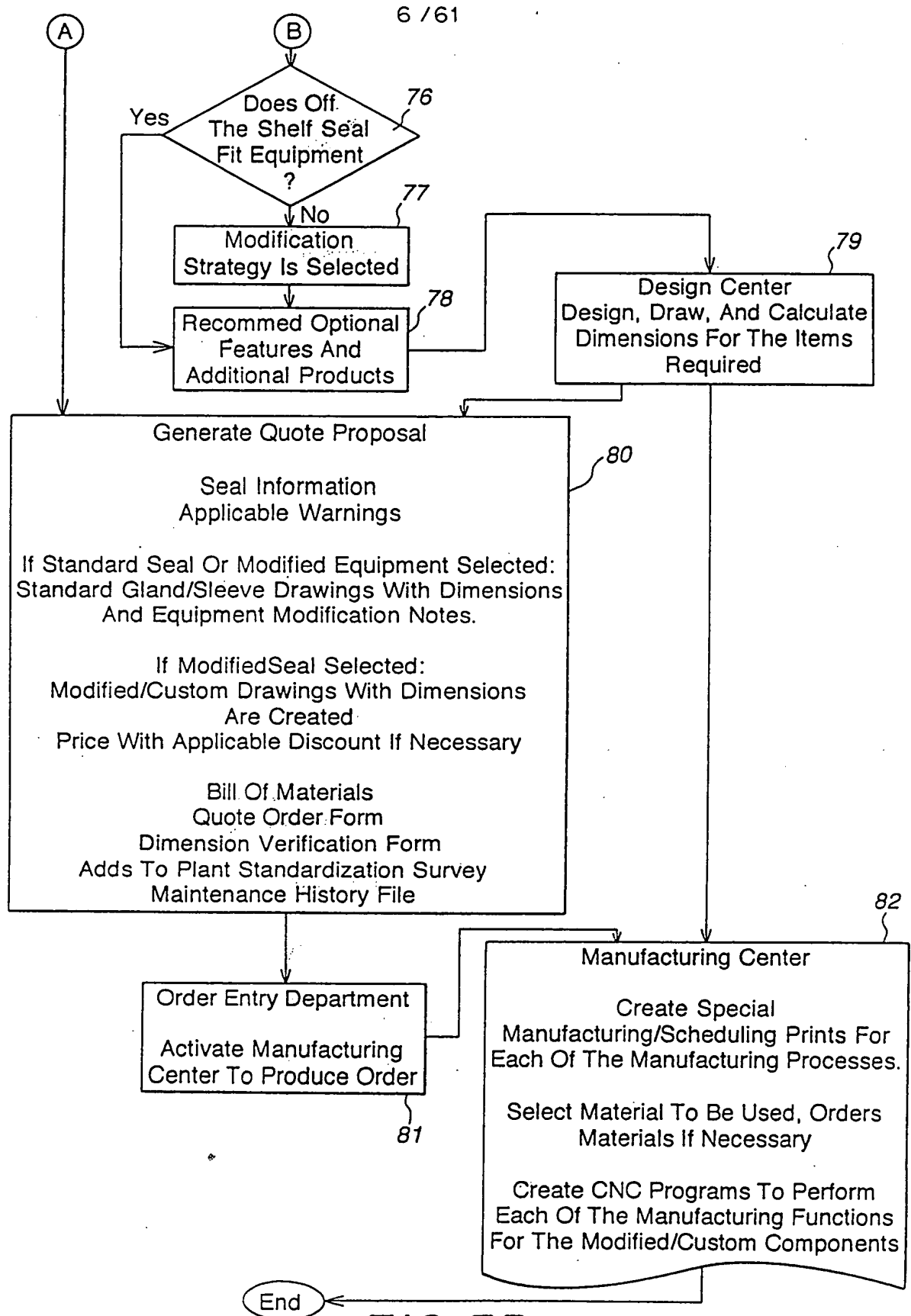


FIG. 3B

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**FIG. 4**

← 90 2.0

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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<div></div> <p><u>Please Enter Customer Data Below</u></p>															
<p><u>Billing and Mailing Information:</u> <span style="float: right;">110 ~</span></p> <table><tr><td>Code</td><td></td></tr><tr><td>Company</td><td>Contact</td></tr><tr><td>Address 1</td><td>Phone</td></tr><tr><td>Address 2</td><td>Fax</td></tr><tr><td>City, State</td><td>E-mail</td></tr><tr><td>Zip Code</td><td>Discount ~ 112</td></tr><tr><td>Country</td><td>Ship Via:</td></tr></table>		Code		Company	Contact	Address 1	Phone	Address 2	Fax	City, State	E-mail	Zip Code	Discount ~ 112	Country	Ship Via:
Code															
Company	Contact														
Address 1	Phone														
Address 2	Fax														
City, State	E-mail														
Zip Code	Discount ~ 112														
Country	Ship Via:														
<p><u>Ship To Information:</u> <span style="float: right;">111 ~</span></p> <p>Complete only if different than mailing address.</p> <table><tr><td>Company</td><td></td></tr><tr><td>Address 1</td><td></td></tr><tr><td>Address 2</td><td></td></tr><tr><td>City, State</td><td></td></tr><tr><td>Zip Code</td><td></td></tr><tr><td>Country</td><td></td></tr></table> <p style="text-align: right;">4.0</p>		Company		Address 1		Address 2		City, State		Zip Code		Country			
Company															
Address 1															
Address 2															
City, State															
Zip Code															
Country															

**FIG. 5**



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Construct the part number of the Delta seal you are currently using  
by clicking on each of the yellow fields and selecting the corresponding letter.

Metal

Elastomer

Seal Model

Seal Size

Inboard Face

Outboard Face

A

V

3200

1.375

G

G

Select any optional features currently included in your seal,  
or select any features you would like to include in your new seal.

120

Available Optional Features

Selected

Part Number

Description

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXX

Yes

No

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

Available Additional Products

122

Yes

No

XXXXXXX

XXXXXXXXXX

XXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXX

XXX

123

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Yes

No

XXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXX

Continue

Go To Quote

10.0

FIG. 6

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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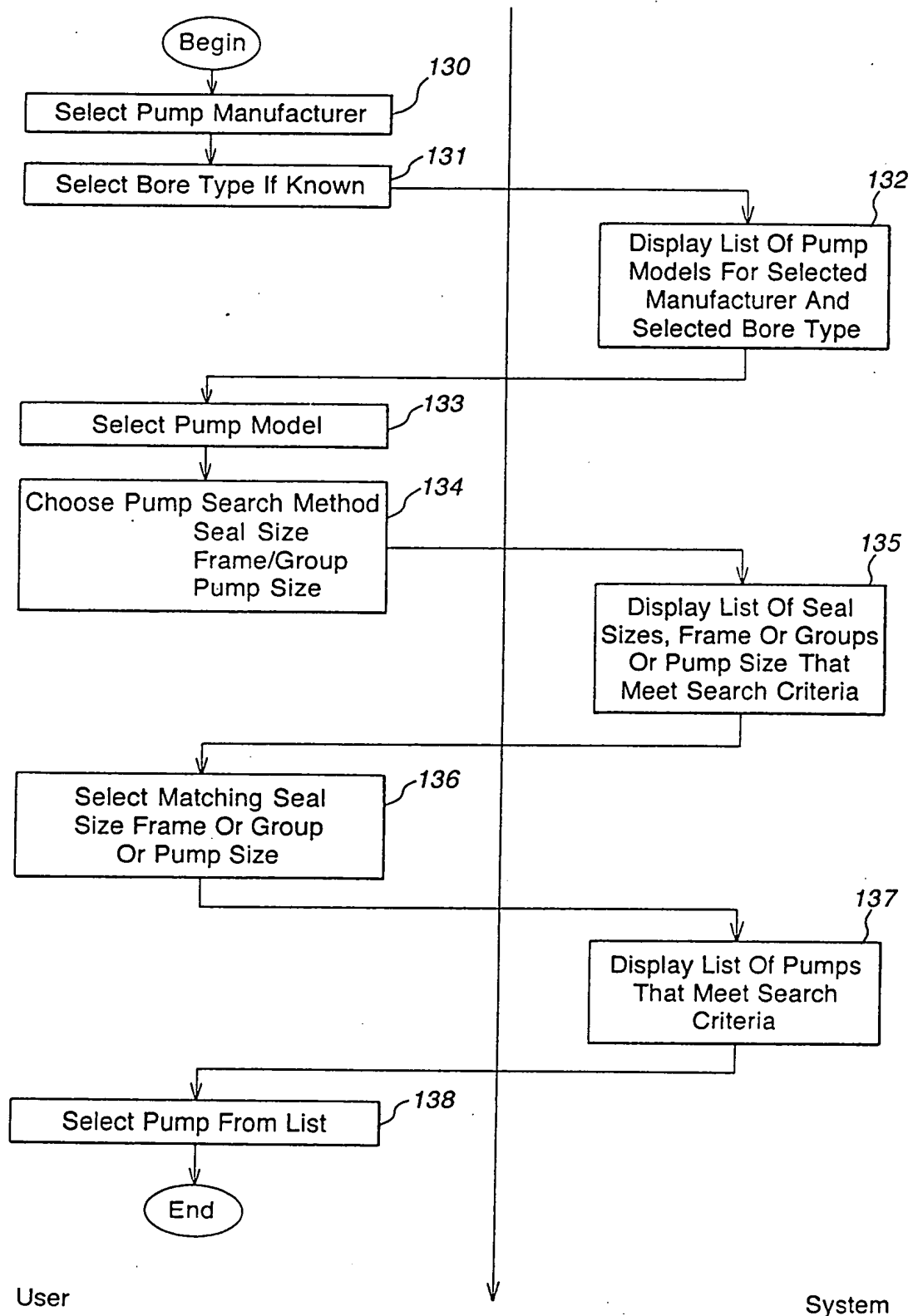


FIG. 7

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Quote #

Please select your pump from the following list  
or click Search Again to try again:

Manufacturer XXXXXX ~140

Number of Matching  
Pumps found= X ~141

PumpID	Model	Frame or Group	Bore Type ?	Packing or SealSleeve ?	Pump Size Summary	
91 142	XXX	X	XXXXXX XXXX	XXXXXX XXXXX XXXXX	XXXXXX XXXXXX XXXXX	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Select a Pump</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-top: 5px;"></div>
92 142	XXX	XXXX	XXXXXX XXXX	XXXXXX XXXXXXX XXXXXX	XXXXXX XXXXXX XXXXX	<div style="border: 1px solid black; width: 40px; height: 20px; margin-top: 5px;"></div>
94 142	XXX	X	XXXXX XXXXXXXX XXXX XXXXXXXXXXXX	XXXXXX XXXXXXX XXXXX	XXXXXX XXXXXX XXXXX	<div style="border: 1px solid black; width: 40px; height: 20px; margin-top: 5px;"></div>

Please scroll down or up for more pumps.

Search again ~144

12.0

FIG. 8

APPARATUS AND METHOD FOR SELECTING  
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Northeast Equipment, Inc.

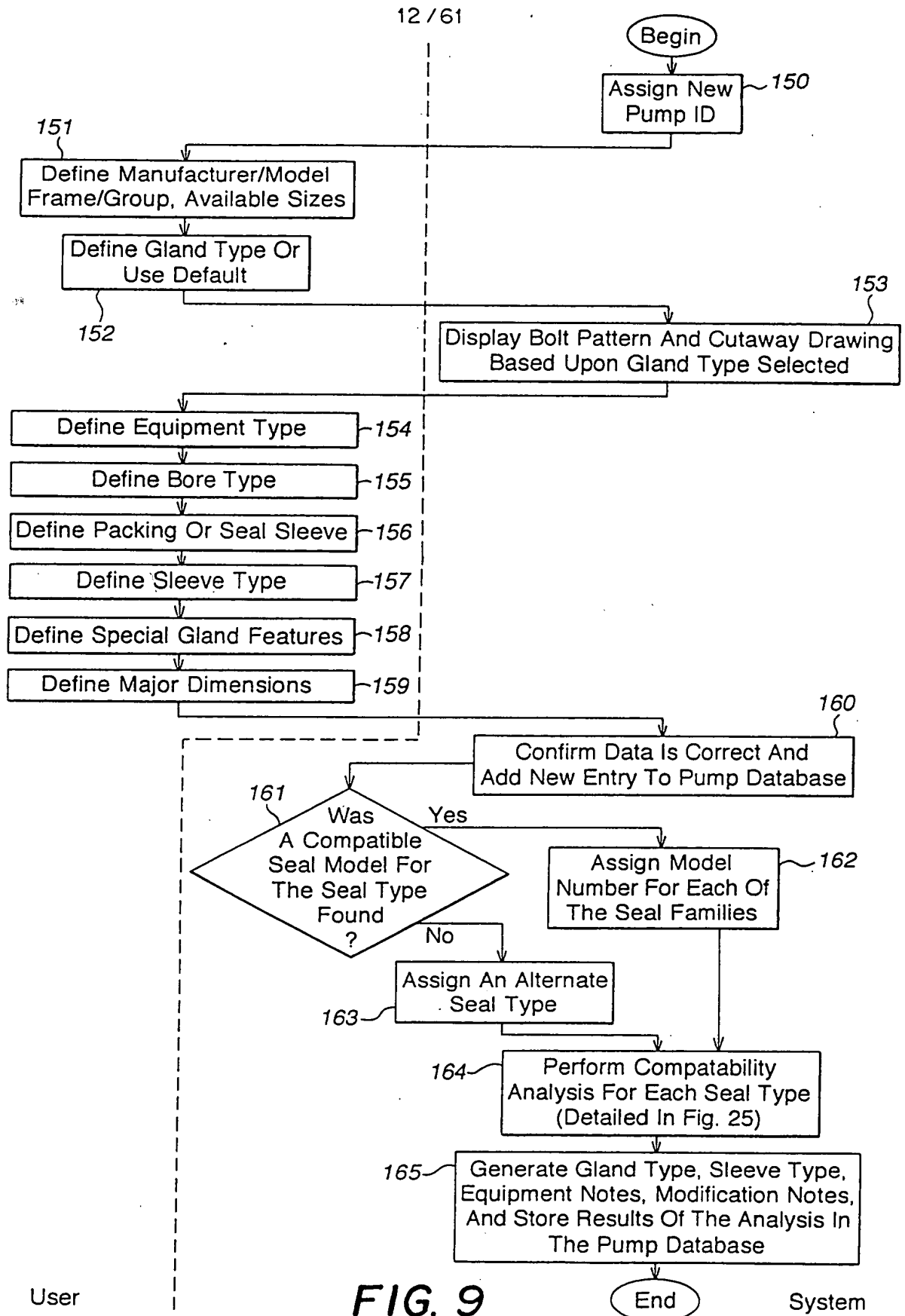


FIG. 9

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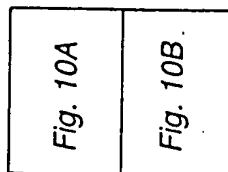


FIG. 10A

Fig. 10

Equipment Engineering Form					3.0
Pump ID	Manufacturer	Model	Frame Or Group	Available Sizes	174
3154	170			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<p>Equipment Type 179</p> <p>Only select gland type if you are positive the standard design will not fit</p> <p>Gland Type <input type="checkbox"/> View Gland Types 176</p> <p>1 = XXXXXXXXXX 7 = XXXXXXXXXX                  2 = XXXXXXXXXX 8 = XXXXXXXXXX                  4 = XXXXXXXXXX 9 = XXXXXXXXXX                  6 = XXXXXXXXXX 10 = XXXXXXXXXX                  12 = XXXXXXXXXX</p>					
<p>Pump Bore Type 180</p> <p>Only select sleeve type if you are positive the standard design will not fit</p> <p>Sleeve Type <input type="checkbox"/> View Sleeve Types 182</p> <p>1 = XXXXXXXXXX                  2 = XXXXXXXXXX                  3 = XXXXXXXXXX                  4 = XXXXXXXXXX</p>					
<p>Pump Packing Or Seal Sleeve 181</p> <p>XXXXXXX</p>					
<p>Special Gland Features 183</p> <p>View Gland Features</p> <p>Yes No XXXXXXXX                  Yes No XXXXXXXX                  Yes No XXXXXXXX</p>					
<p>Equipment Identification</p> <p>Yes XXXXXXXX                  No XXXXXXXX                  Not Sure XXXXXXXX</p> <p>Sources Of Information: 201</p> <p>XXXXXXX                  XXXXXXXX                  XXXXXXXX                  XXXXXXXX                  XXXXXXXX</p>					

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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		Box Details				Bolting Details				Rec- tangular Bolt Pattern Only		Round Gland Only		Pilot Details		Shaft/Sleeve Details				
		A	C	D	I	U	S	Q	M	R	W	Z	E.O.D. Gland OD	M.O.D. Gland OD	N	F	E	G	B	
Pump Dimen- sional Infor- mation 203 (?)	Solid Shaft/ Sleeve OD																			

Equipment Modification

☐ Yes XXXXXXXX

☐ No XXXXXXXX

☐ Not Sure XXXXXXXX

How were pump/equipment  
dimensions obtained?

☐ XXXXXXXX

☐ XXXXXXXX

☐ XXXXXXXX

☐ XXXXXXXX

202

FIG. 10B

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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<p>Gland Type</p> <div style="border: 1px solid black; width: 50px; height: 40px; display: inline-block;"></div> <p>231</p>		<p>1 = XXXXXXXXXXXX 2 = XXXXXXXXXXXX 4 = XXXXXXXXXXXX 6 = XXXXXXXXXXXX</p>	<p>7 = XXXXXXXXXXXX 8 = XXXXXXXXXXXX 9 = XXXXXXXXXXXX 10 = XXXXXXXXXXXX 12 = XXXXXXXXXXXX</p>																																																															
<p>Dimensional Type ~230</p> <p><input type="radio"/> A = No Problems - Go Ahead</p> <p><input type="radio"/> B = Verify 1 Dimension - Go Ahead. Not 100% sure.</p> <p><input type="radio"/> C = Verify All Dimensions - Receive Quote</p> <p><input type="radio"/> D = Supply all dimensions - Receive Quote</p>		<table border="1"> <thead> <tr> <th colspan="2">1</th> <th>2</th> <th>3</th> <th>4</th> <th colspan="3">5</th> </tr> <tr> <th>Seal Sleeve</th> <th>Packing Sleeve</th> <th>Bore</th> <th>Depth</th> <th>1st Obstr</th> <th># of Bolts</th> <th>Bolt Spacing</th> <th>Bolting Size</th> </tr> </thead> <tbody> <tr> <td>Delta's Model #s</td> <td>Alter nate</td> <td>Enter Model#</td> <td>Gland Type</td> <td>Sleeve Type</td> <td colspan="3">Seal Fits Equipment</td> </tr> <tr> <td>Single-3000, 3001, 3005, 3400, 3700</td> <td>211</td> <td>210</td> <td>212</td> <td>213</td> <td>Note1</td> <td>Note2</td> <td>Note3 Note4</td> </tr> <tr> <td>OEM Single</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>214</td> </tr> <tr> <td>Double-3200, 3201, 3205, 3800</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Double 3220, 3225, 3221</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>504C 216</td> <td>507C 217</td> <td>506C 218</td> <td>508C 220</td> <td>509C 221</td> <td>511C 222</td> <td>514C 223</td> <td></td> </tr> </tbody> </table>	1		2	3	4	5			Seal Sleeve	Packing Sleeve	Bore	Depth	1st Obstr	# of Bolts	Bolt Spacing	Bolting Size	Delta's Model #s	Alter nate	Enter Model#	Gland Type	Sleeve Type	Seal Fits Equipment			Single-3000, 3001, 3005, 3400, 3700	211	210	212	213	Note1	Note2	Note3 Note4	OEM Single							214	Double-3200, 3201, 3205, 3800								Double 3220, 3225, 3221								504C 216	507C 217	506C 218	508C 220	509C 221	511C 222	514C 223	
1		2	3	4	5																																																													
Seal Sleeve	Packing Sleeve	Bore	Depth	1st Obstr	# of Bolts	Bolt Spacing	Bolting Size																																																											
Delta's Model #s	Alter nate	Enter Model#	Gland Type	Sleeve Type	Seal Fits Equipment																																																													
Single-3000, 3001, 3005, 3400, 3700	211	210	212	213	Note1	Note2	Note3 Note4																																																											
OEM Single							214																																																											
Double-3200, 3201, 3205, 3800																																																																		
Double 3220, 3225, 3221																																																																		
504C 216	507C 217	506C 218	508C 220	509C 221	511C 222	514C 223																																																												
Single	Double	OEM																																																																

FIG. 11A

SleeveType

232

1 = XXXXXXXXXXXX  
2 = XXXXXXXXXXXXXXXXXXXX  
3 = XXXXXXXXXXXXXXXX  
4 = XXXXXXXXXXXXXXXX

		6		8		9	10	11		
Stud Projection	Bolt Circles	Gland OD Exist.	Gland OD Max	ID Pilot	Pilot Depth	OD Pilot	Sleeve Extend From	Sleeve Steps to Shaft Size		
Internal Equipment Fits Seal										
Note5	Note6	Note7	Print#	Note1	Note2	Note3	Note4	Note5	Note6	Note7
							215			
516C 224	517C 225	518C 226	519D 227	520D 228	501D 229					

Fig. 11A

Fig. 11B

Fig. 11

FIG. 11B



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DS		L2			L1			D3			D4			D1			L3		
Seal	Seal	D2	D2	Inside	Outside	Slot	Gland	Gland	Sleeve	Gland	Flat	OD	Flat	OD	Length	Flat	OD	Length	
Model	Size	Min	Max	Length	Length	3/8	1/2	5/8	3/4	Width	OD	Flat	OD	Flat	OD	Length	Flat	OD	Length
	250	251	252	253	254	255	256	257	258	259	260	261	262	263					
Actual																			
Casting																			
OD of Shroud Gasket Bore InShroud Balance Internal																			
OD Slot ID on Casting OD Gland OD Diameter Diameter Obstruction																			
	271	272	273	274	275	276	277	278	279										
Bar Gland																			
Length Pos1 Pos2 Pos3 Pos4 Pos5 Pos6																			
	264	265	266	267	268	269	270												
Inboard Internal																			
Internal Depth																			
Obstruction Obstruction																			
	280	281																	

**FIG. 12**

APPARATUS AND METHOD FOR SELECTING  
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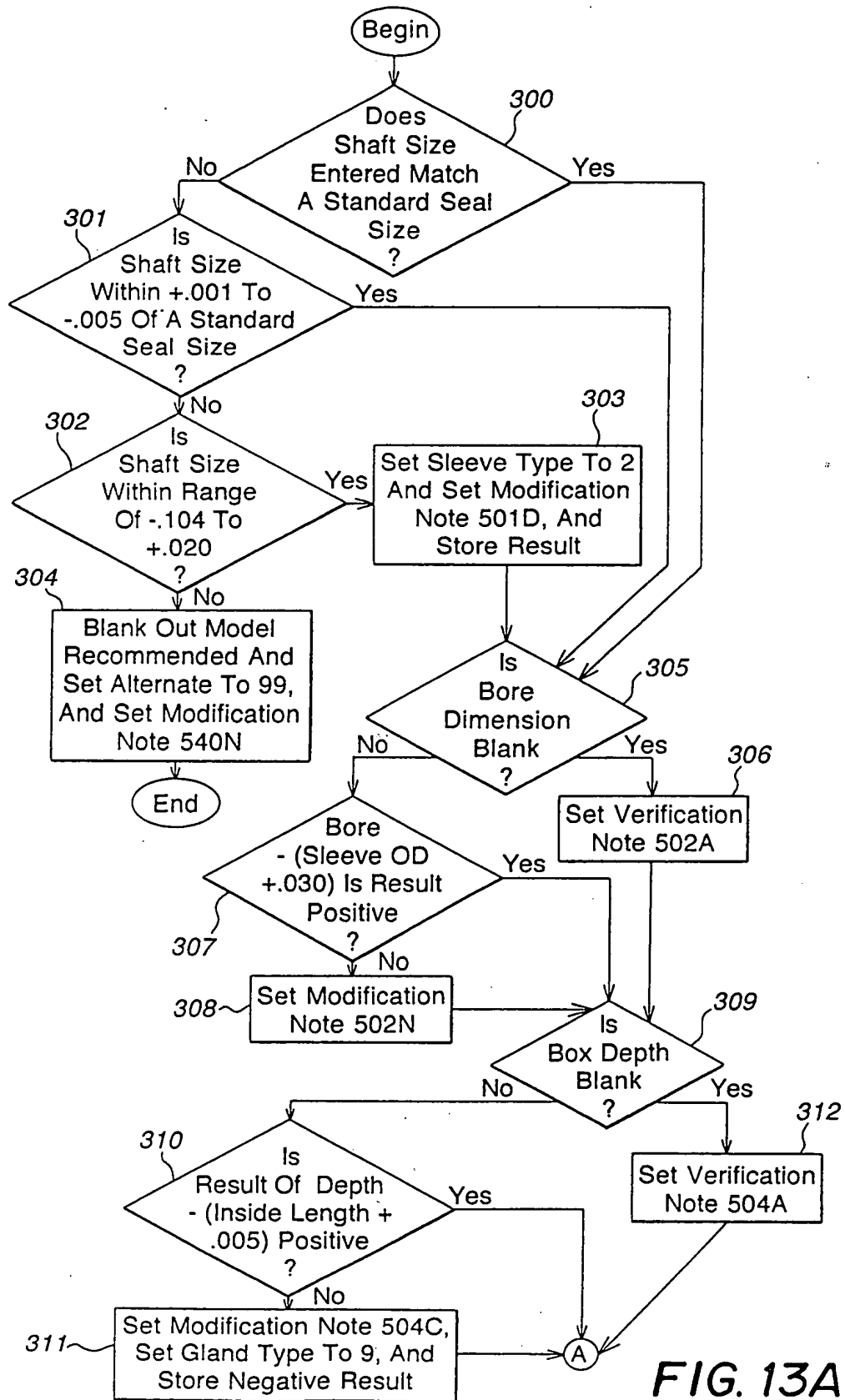


FIG. 13A

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

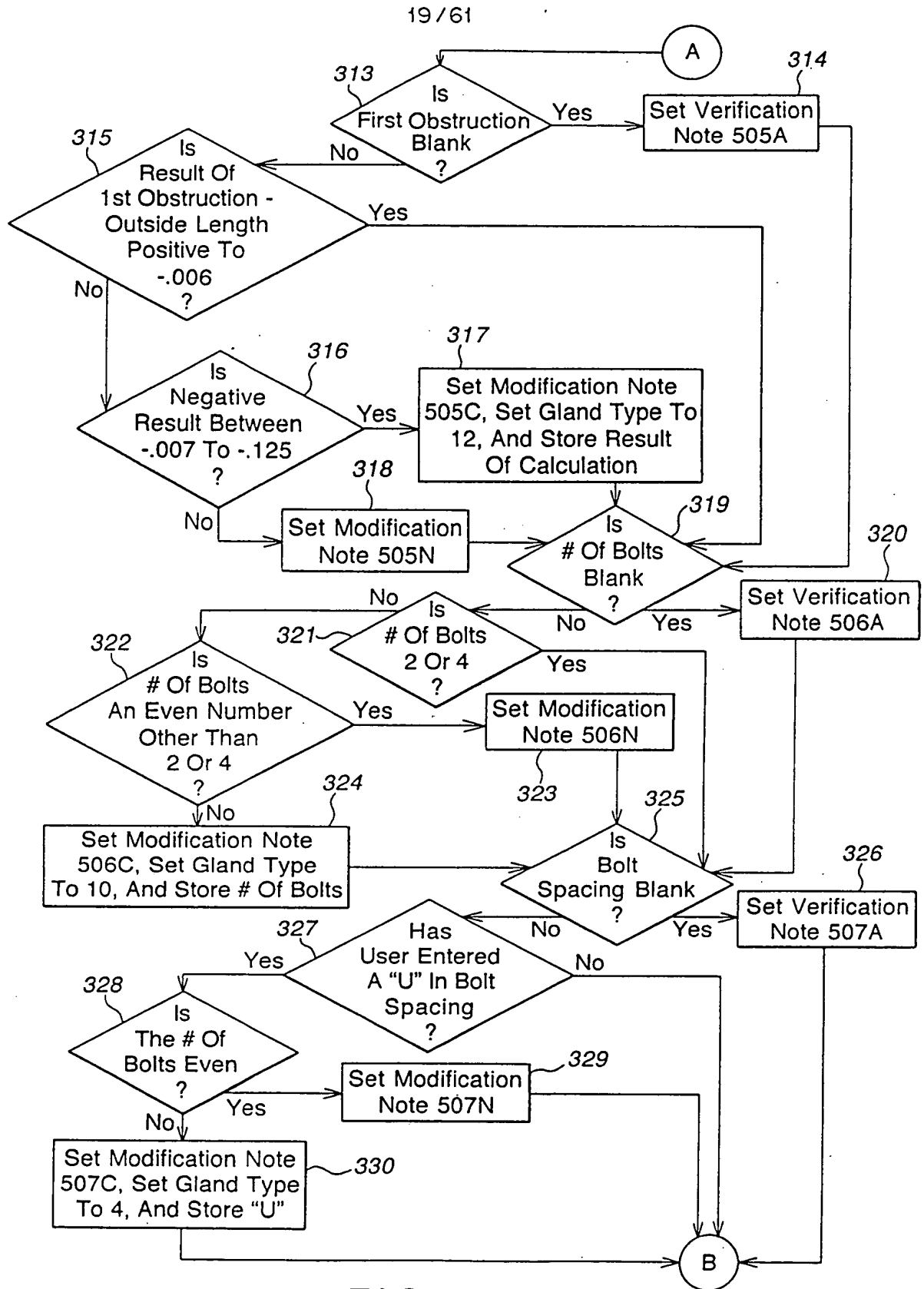


FIG. 13B

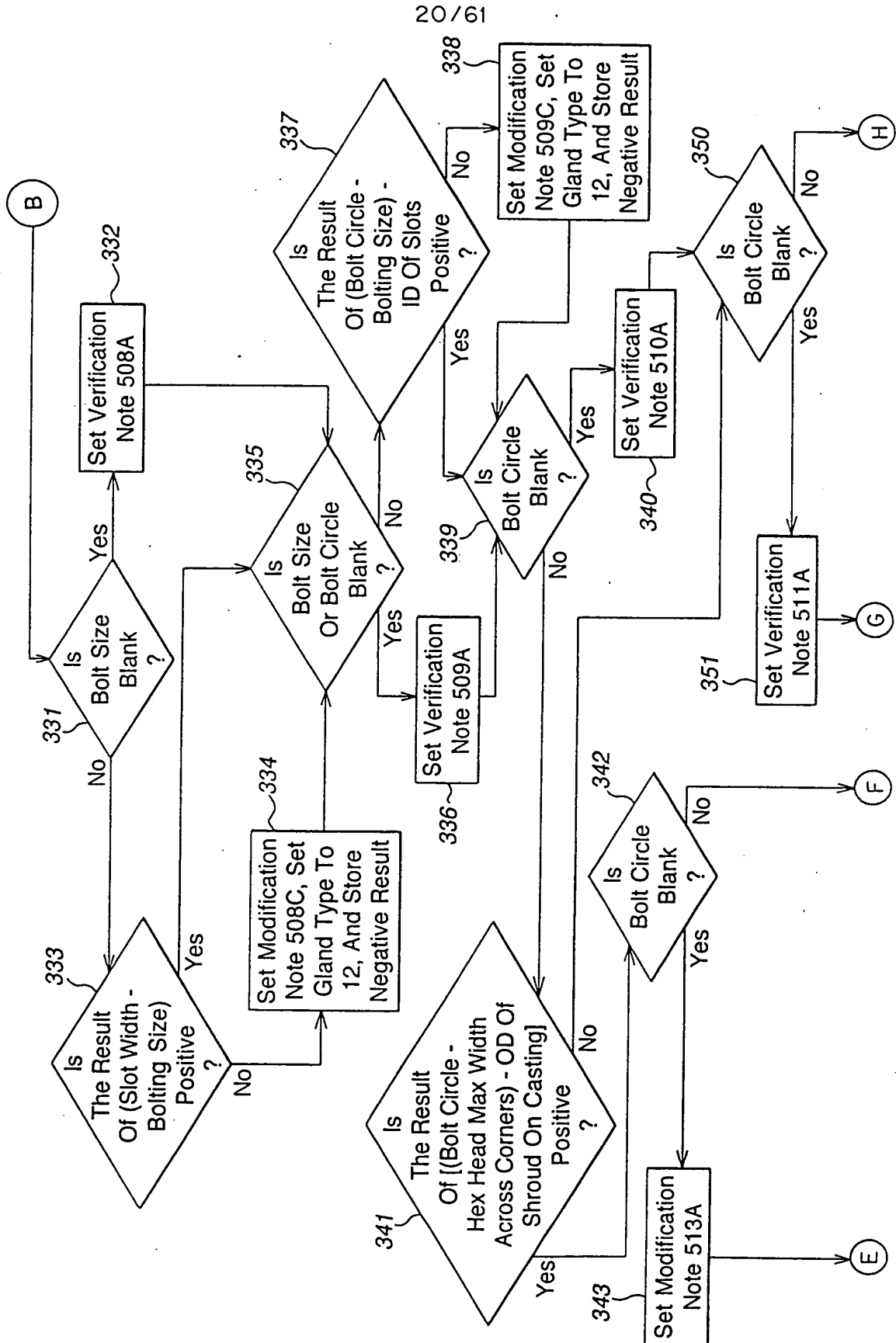


FIG. 13C(1)

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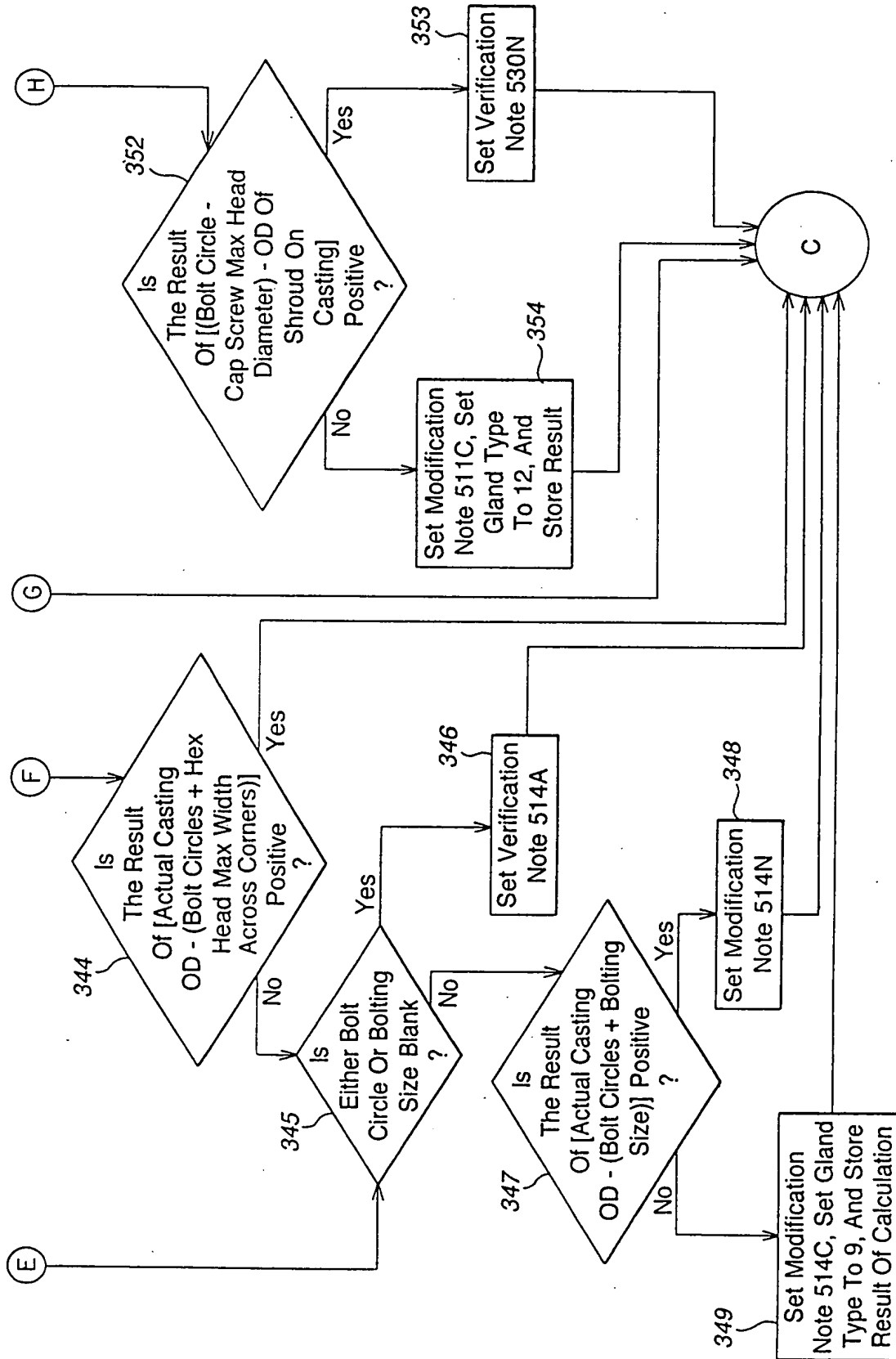


FIG. 13C(2)

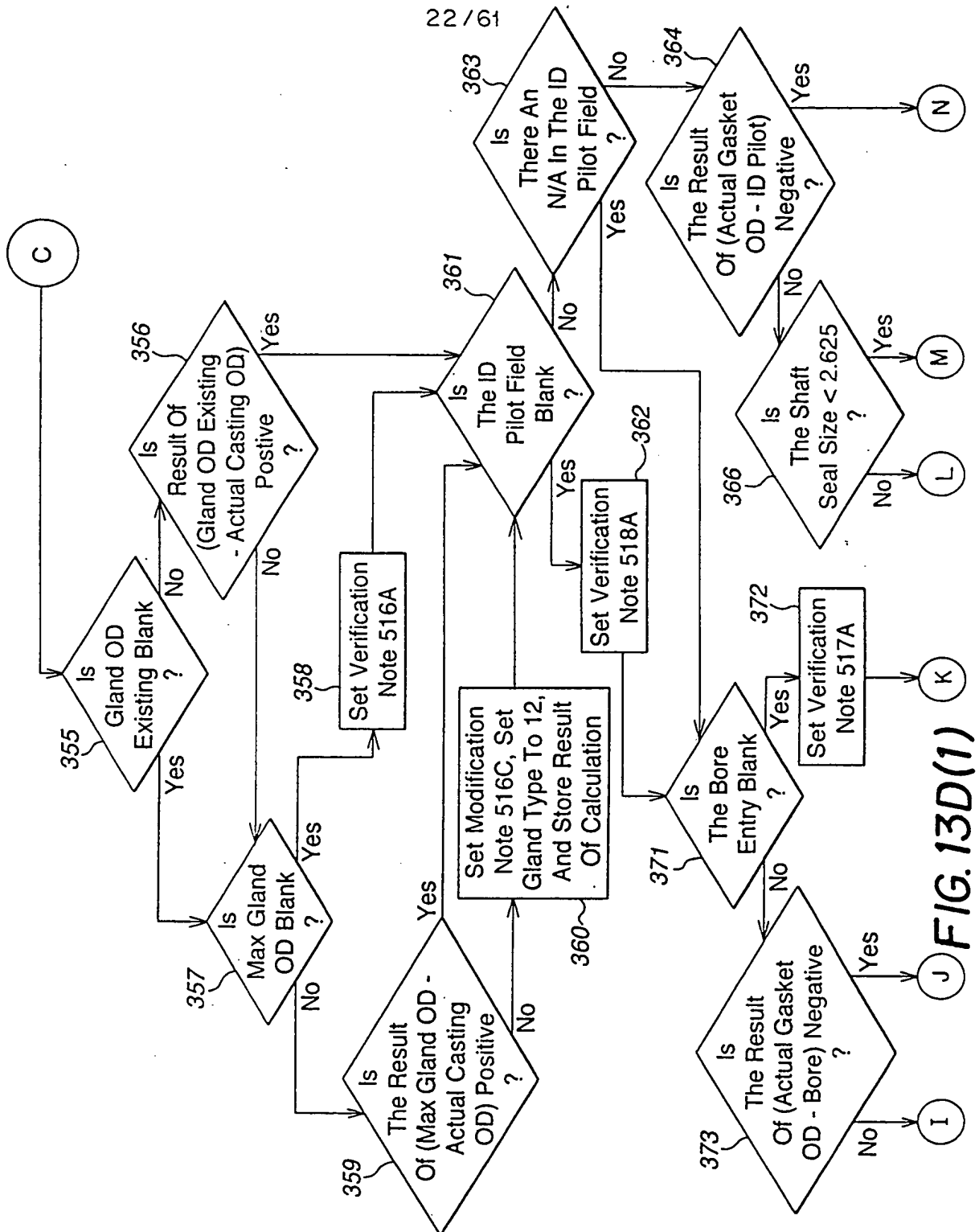


FIG. 13D(1)

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Northeast Equipment, Inc.

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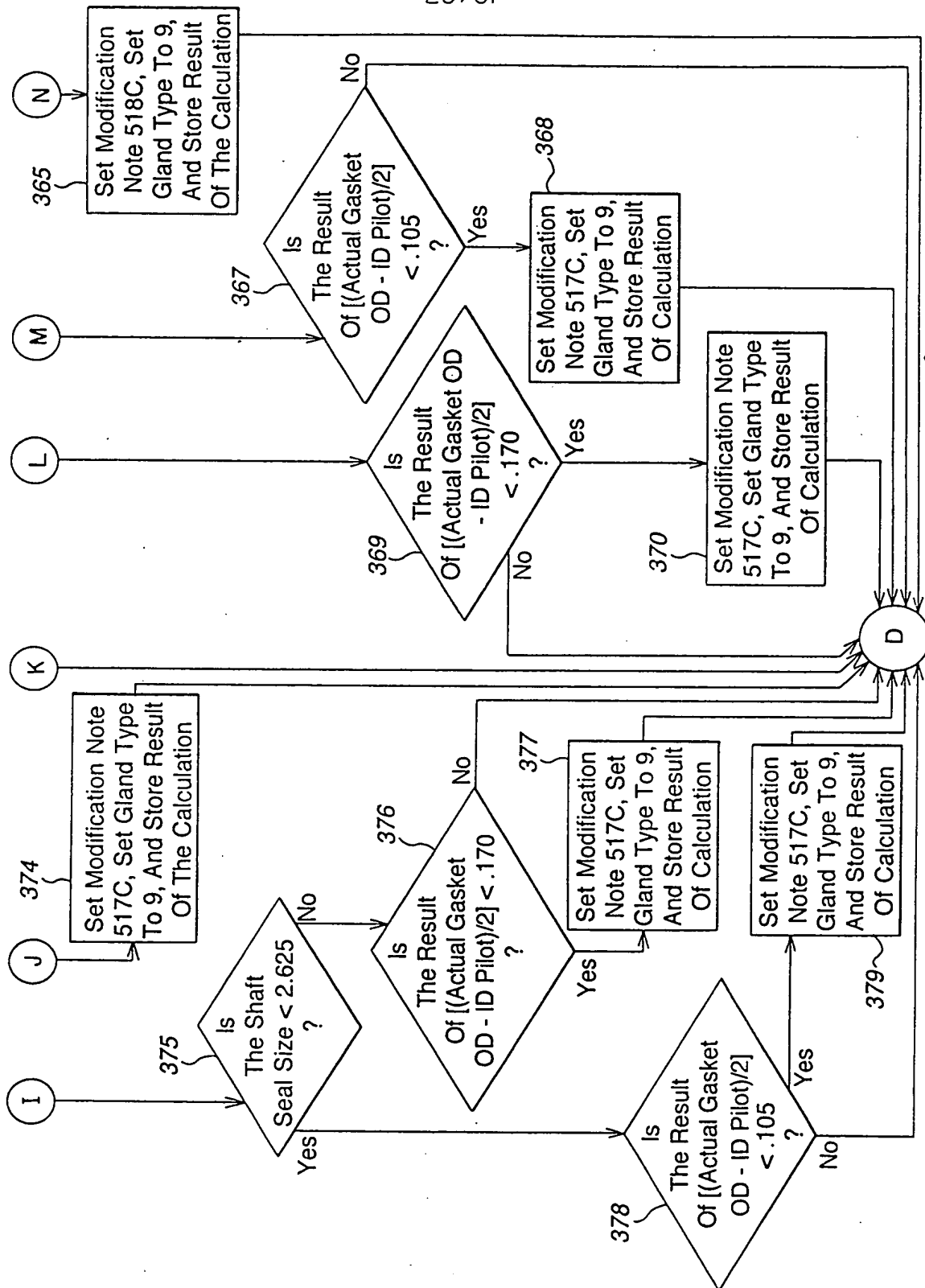


FIG. 13D(2)

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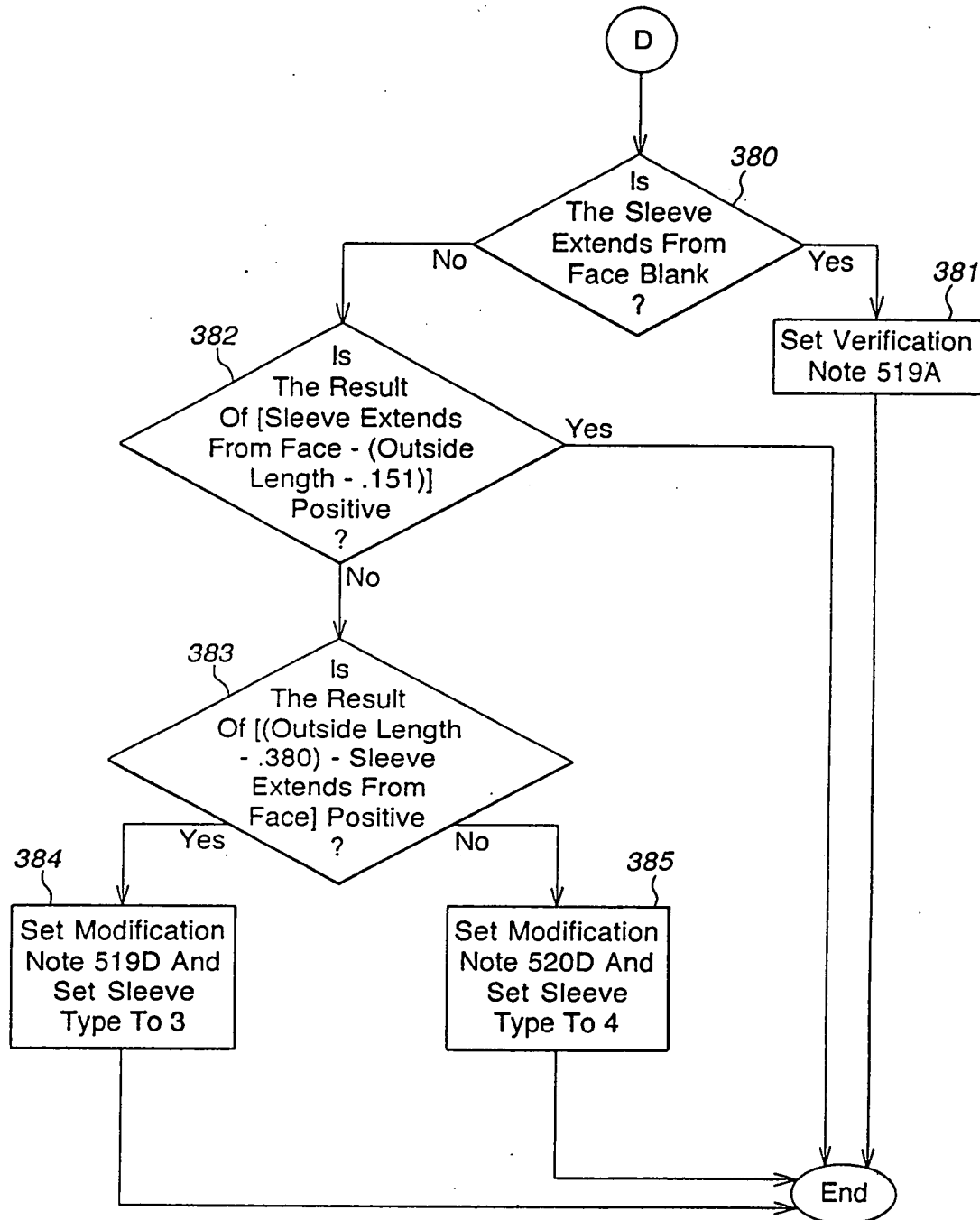


FIG. 13E



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Quote#	
<p style="text-align: center;">For a recommended Seal Selection Method from the list below please choose the Seal Model you are currently using:</p> <p>Current Seal Model: AnchorModel 16/ Single Seal</p> <p>The manufacturer suggests selecting option 3 from the menu below</p>	
421 ~	Competitive Analysis
422 ~	Internal Analysis
<b>Material Code Key</b>	
<p>To cross reference your current seal by the materials of construction, click the Cross Reference button.</p>	
437 ~	Cross Reference
<b>Seal Selection Method:</b>	
<p>System recommends a single or double cartridge seal for a given chemical and pump combination, selecting from single cartridge models 3000, 3001, 3005, 3400, and 3700, and double cartridge models 3220, 3221, and 3800, with seal sizes 1 inch to 5 inches.</p> <p>Please change seal selection method or "continue":</p> <ul style="list-style-type: none"><li>○1 You pick the seal ~423</li><li>◎2 System recommends a single or double cartridge seal ~424</li><li>○3 System recommends a single cartridge seal ~425</li><li>○4 System recommends a double cartridge seal ~426</li><li>○5 System recommends a double cartridge seal with pumping ring ~427</li><li>○6 System recommends an OEM single cartridge seal ~428</li><li>○7 System recommends a split seal ~431</li><li>○8 System recommends a single bellows cartridge seal ~432</li><li>○9 System recommends a double bellows cartridge seal ~433</li><li>○10 Various OEM "Component"; Rotaries, Stationaries, Glands ~434</li></ul>	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">View Product Brochure</div>	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">Select Materials</div>	
429	
430	

13.0

**FIG. 14**

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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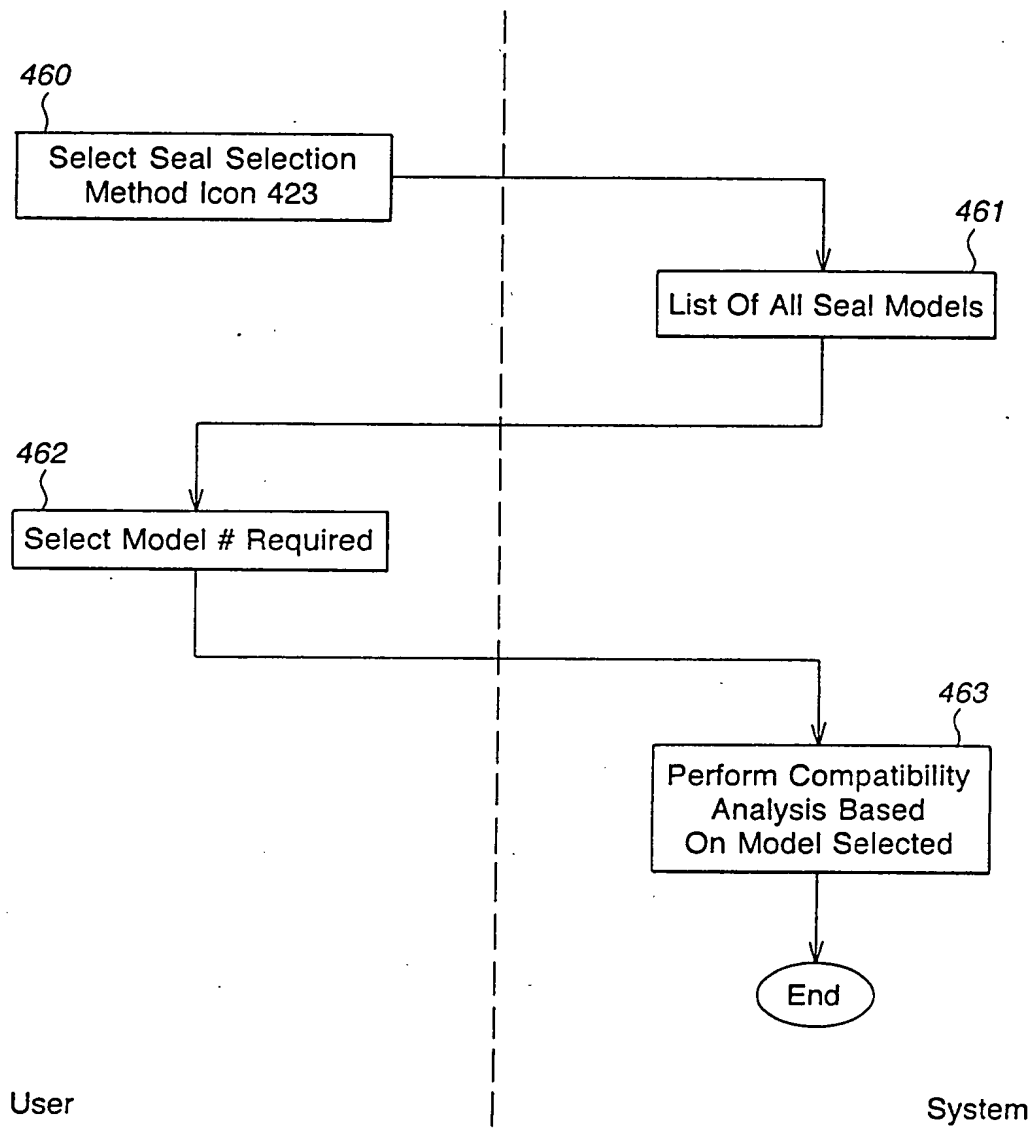
<div data-bbox="300 304 665 378">Materials of Construction</div> <div data-bbox="349 388 568 430">XXXXXXXXXX</div> <div data-bbox="422 441 552 483">Metals</div> <div data-bbox="365 483 584 525">XXXXXXXXXX</div> <div data-bbox="300 514 584 619"> <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXX         </div> <div data-bbox="422 630 552 672">Faces</div> <div data-bbox="422 672 560 714">Inboard:</div> <div data-bbox="300 703 649 850"> <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX         </div> <div data-bbox="422 850 576 892">Outboard:</div> <div data-bbox="300 892 649 976"> <input checked="" type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX         </div> <div data-bbox="381 997 576 1039">Elastomers</div> <div data-bbox="300 1050 649 1228"> <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXX  <input type="radio"/> XXXXXXXXXXXXXXXX  <input type="radio"/> XXXXXXXXXX         </div> <div data-bbox="430 1249 552 1291">Plans</div> <div data-bbox="341 1312 568 1459">           XXXXXX            XXXXXX            XXXXXXXXXXXX            XXXXXX         </div>	<div data-bbox="698 304 941 378">Process Fluids Quick Reference</div> <div data-bbox="714 388 941 430">XXXXXXXXXX</div> <div data-bbox="787 441 917 483">Metals</div> <div data-bbox="714 493 974 630">           XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX         </div> <div data-bbox="787 630 917 672">Faces</div> <div data-bbox="706 682 990 892">           XXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXX         </div> <div data-bbox="738 913 933 955">Elastomers</div> <div data-bbox="706 966 990 1144">           XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX         </div> <div data-bbox="787 1165 909 1207">Plans</div> <div data-bbox="706 1228 990 1407">           XXXXXXXXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXX            XXXXXXXXXXXXXXXX            XXXXXXXXXXXXXXXX         </div> <div data-bbox="787 1428 909 1470">Notes</div>	<div data-bbox="1031 304 1437 357">Current Seal Construction</div> <div data-bbox="1169 367 1299 409">Model</div> <div data-bbox="1169 441 1299 483">Design</div> <div data-bbox="1136 504 1242 546">Size</div> <div data-bbox="1136 546 1323 588">Metal Parts</div> <div data-bbox="1112 609 1356 651">Gland Features</div> <div data-bbox="1112 672 1356 724">Spring Loaded</div> <div data-bbox="1161 745 1307 787">Bellows</div> <div data-bbox="1063 819 1396 871">Inboard Rotary Faces</div> <div data-bbox="1055 903 1412 955">Outboard Rotary Faces</div> <div data-bbox="1088 976 1380 1029">Stationary Design</div> <div data-bbox="1039 1060 1429 1113">Inboard Stationary Faces</div> <div data-bbox="1031 1144 1437 1197">Outboard Stationary Faces</div> <div data-bbox="1128 1228 1323 1281">Elastomers</div> <div data-bbox="1112 1323 1339 1396"></div>
---	---	--

Quote# 1960

26.0

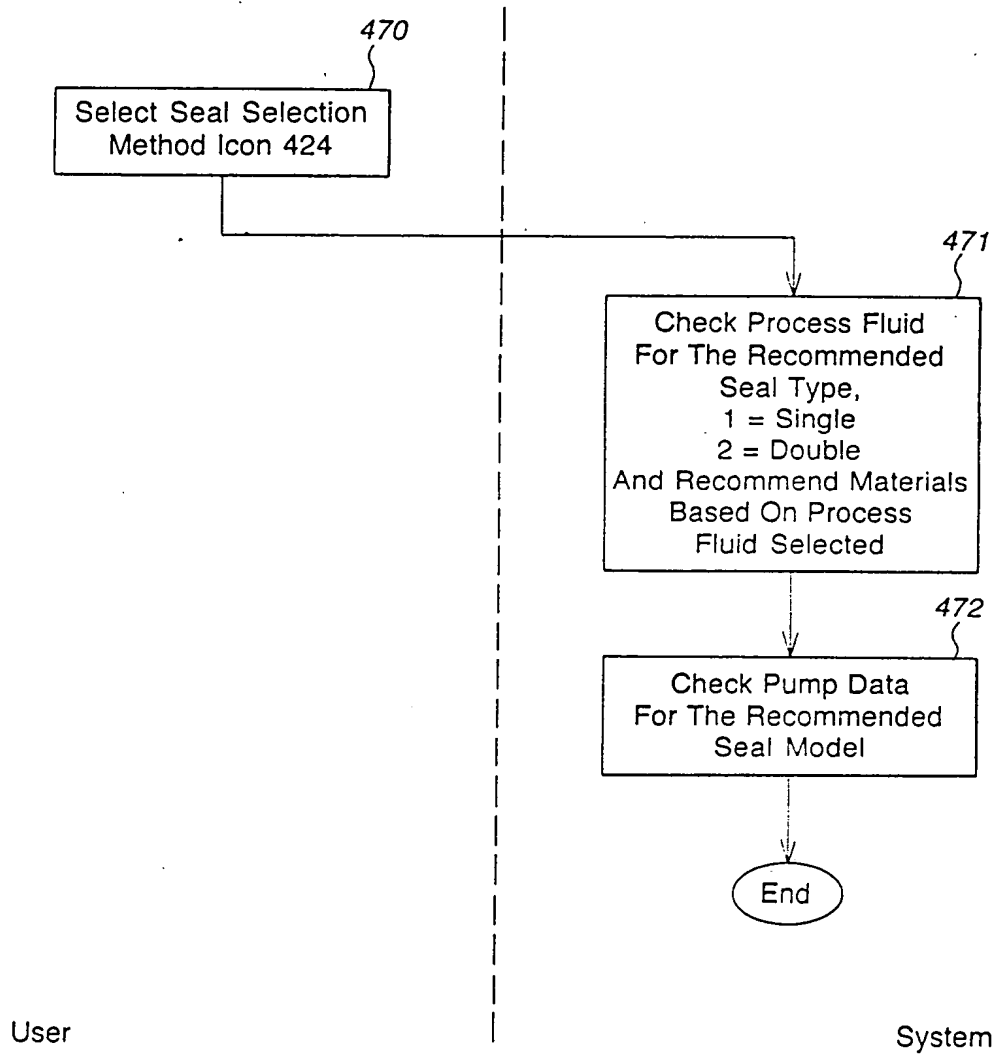
FIG. 15

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**FIG. 16**

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**FIG. 17**

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Process Fluid Information									
ETHANE (Methylmethane)									
480		483		484		485		486	
% Concen	Temp	SEC-1	SEC-2	SH&C	DEC-1	DEC-2	DH&C		
481	482	11			53	97			
ORingSeal sc2		Single-3000, 3001, 3005, 3400, 3700, sc3		Alter nate	Single-3500, sc6		Alter nate		
		1:AV A			1:AV A				
21AV AA		488		489	488		489	488	
487								489	

FIG. 18A

Fig. 18A	Fig. 18B
----------	----------

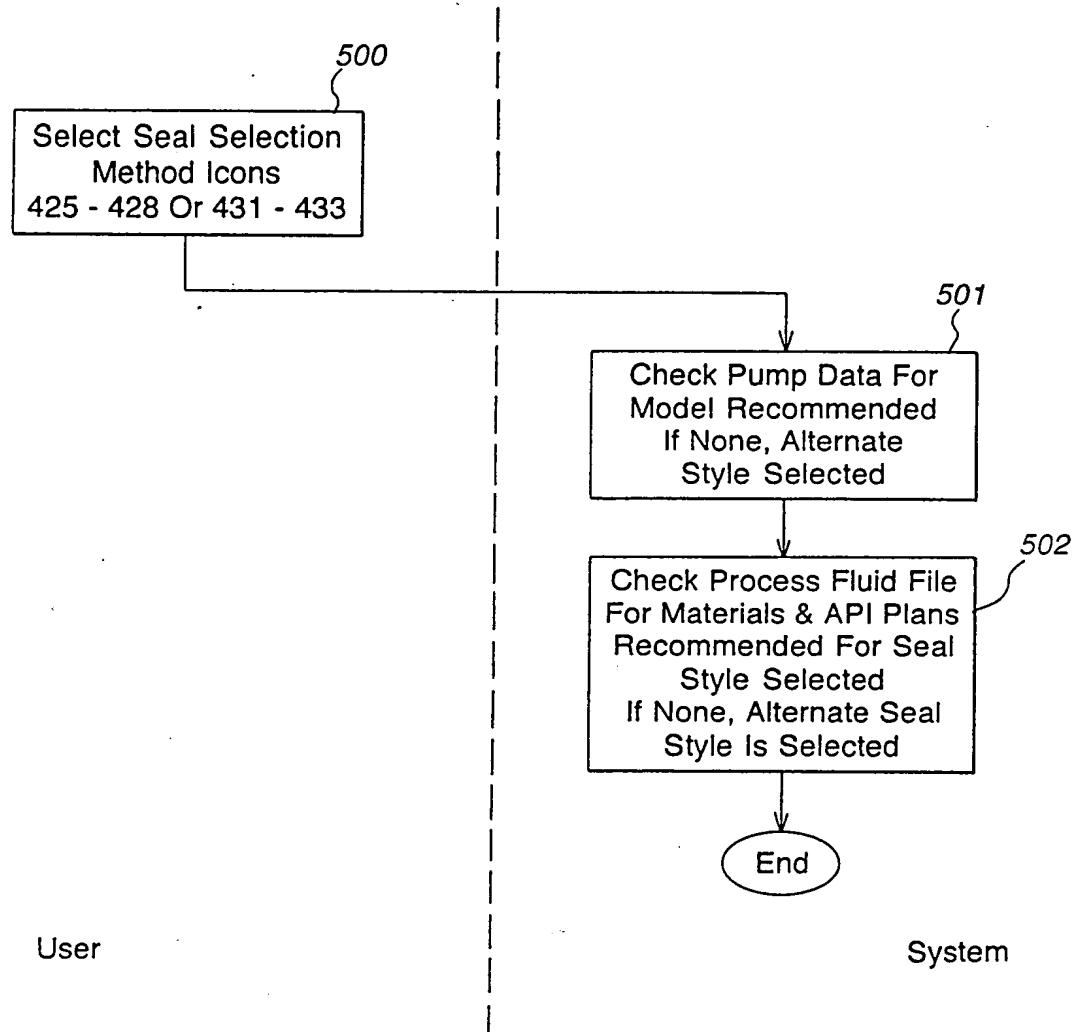
Fig. 18

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[illegible]

**FIG. 18B**

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**FIG. 19**

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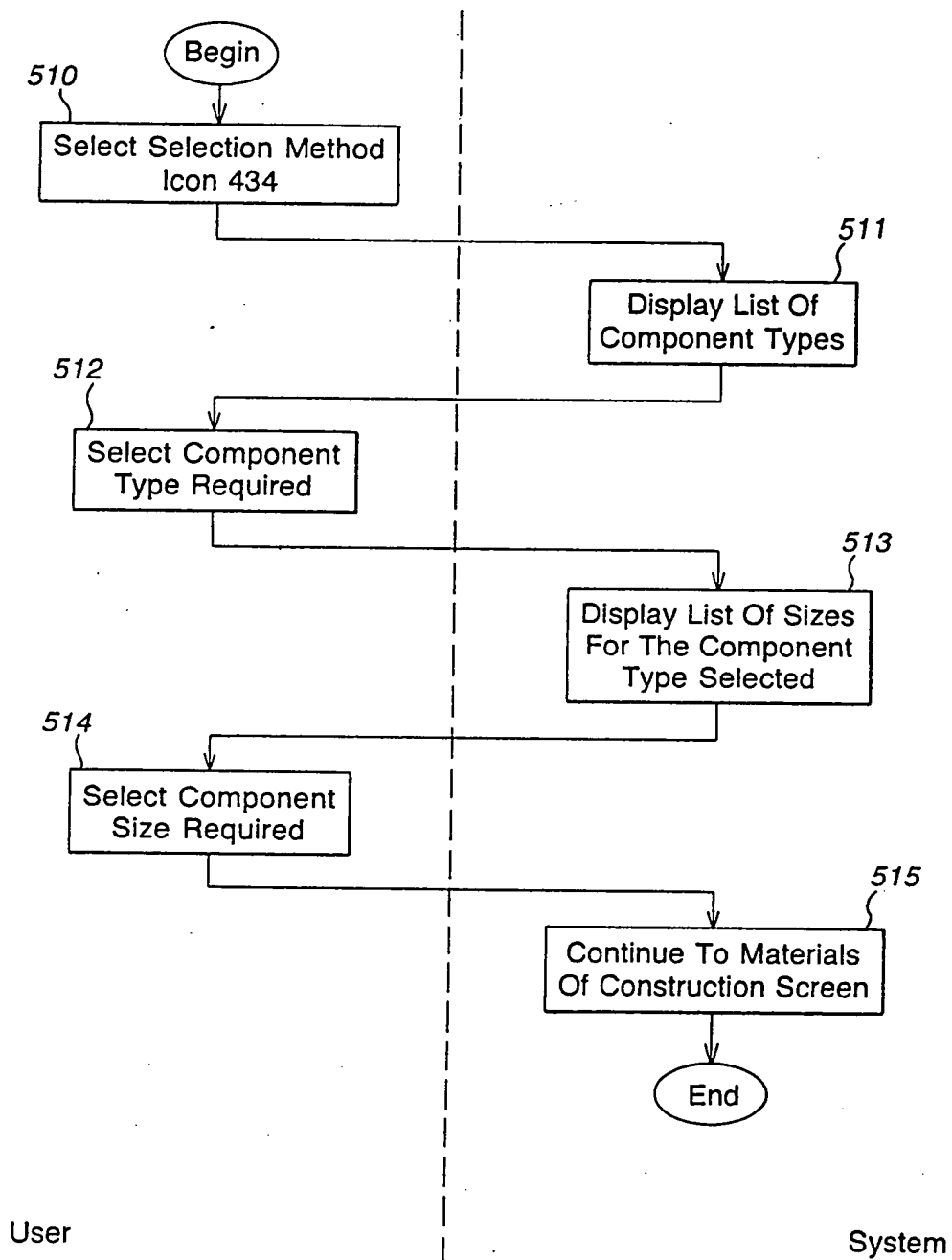


FIG. 20



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Select A Barrier Fluid						QuoteID	1828
Fluid		Temperature Limitations				Comments	
Click On The Barrier Fluid You Are Currently Using		Lower		Upper			
F	C	F	C				
Automatic Transmission Fluid		50	10	190	88	Ethylene glycol is VHAP in some states EPR unacceptable. VHAP, viton unacceptable.	
EG/Water, 60/40		-50	-46	210	99		
Kerosene	520	5	-15	290	143		
Methanol		-90	-68	35	2		
Mineral Oil - SAE10		-140	-95	155	67		
N - Propyl Alcohol		40	4	160	71		
No. 2 Diesel & Fuel		15	-9	290	143		
Propylene Glycol/Water, 60/40		-50	-46	210	99		
Royal Purple FDA		-50	-46	400	204		
Water		45	7	185	85		
Other						Freezes at 32 degrees F	
View Barrier Fluid Considerations							

Quote# 1828

28.0

FIG. 21

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Choose Modification Strategy

Please select the seal modification approach you want to use.

Select Modification Strategy

☒ Supplier will supply a seal to fit equipment

☐ Customer will modify equipment to fit seal

?

525

29.0

**FIG. 22**

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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Part Code XXXXXXXXXXXX		Delivery on or About	
Balanced Spring Loaded Stationary Design Double Cartridge Seal			

Available Optional Features		<input type="button" value="View Graphic of Optional Features"/>
-----------------------------	--	--

The Manufacturer recommends the following optional features based on the process fluid chosen and the environmental controls selected.

Selected	Recommended Description	
<input checked="" type="radio"/> Yes <input type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	
<input checked="" type="radio"/> Yes <input type="radio"/> No	XXXXXXXXXXXX XXXXXXXXXXXXXXX	530
<input checked="" type="radio"/> Yes <input type="radio"/> No	XXXXXXXXXXXX	
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	534
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	

Available Additional Products		<input type="button" value="View Graphic of Additional Products"/>
-------------------------------	--	--

<input checked="" type="radio"/> Yes <input type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	XXXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	532 XXXX

Due to the API Plans selected, the following additional products are recommended.

Selected	Recommended Description	Each	Number	Amount
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	533 XXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXX	XXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXX	X	XXX
<input type="radio"/> Yes <input checked="" type="radio"/> No	XXXXXXXXXXXXXXXXXXXX	XXXXXX	X	XXX

**FIG. 23**

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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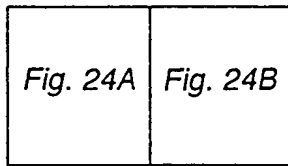


Fig. 24

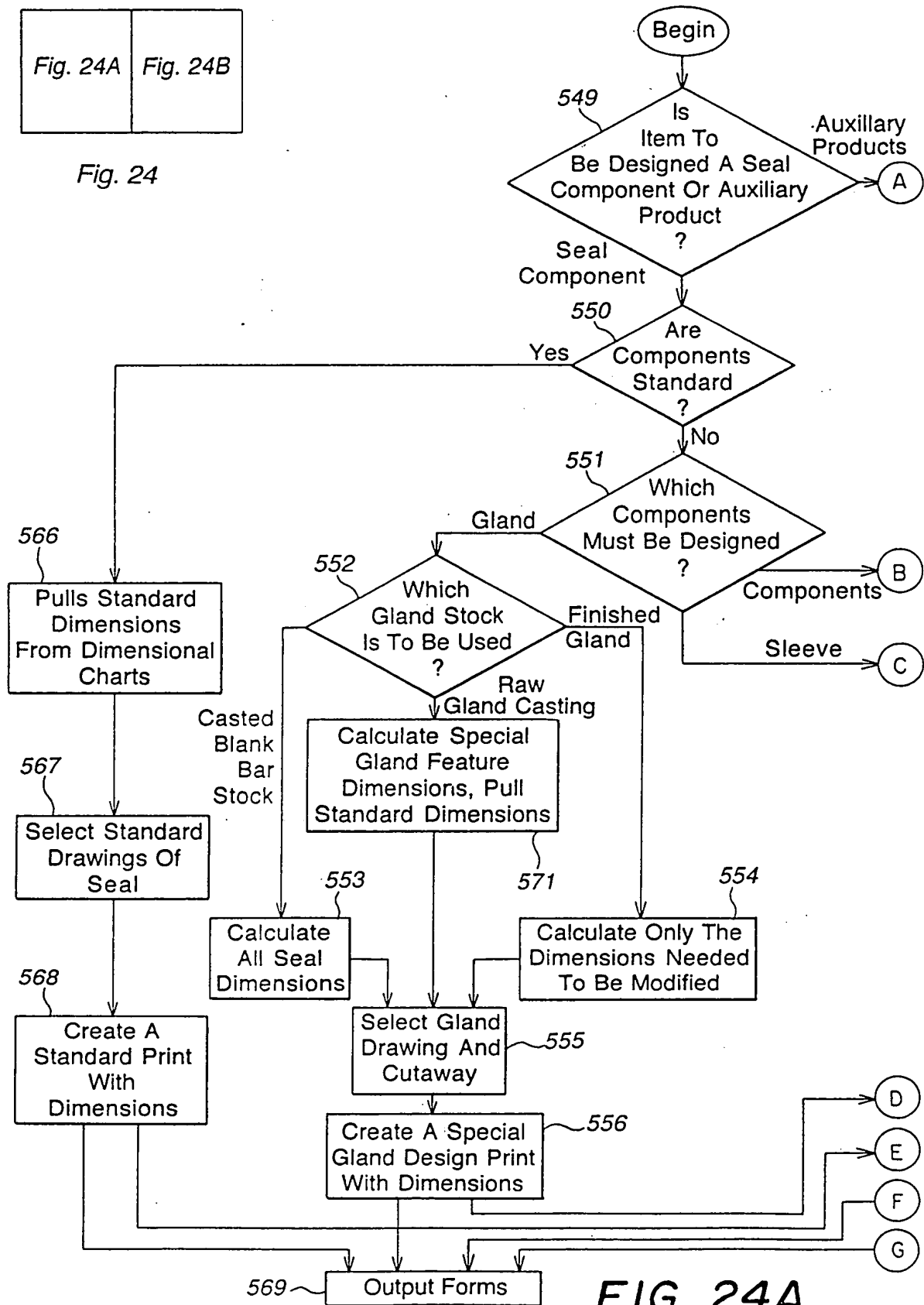


FIG. 24A

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

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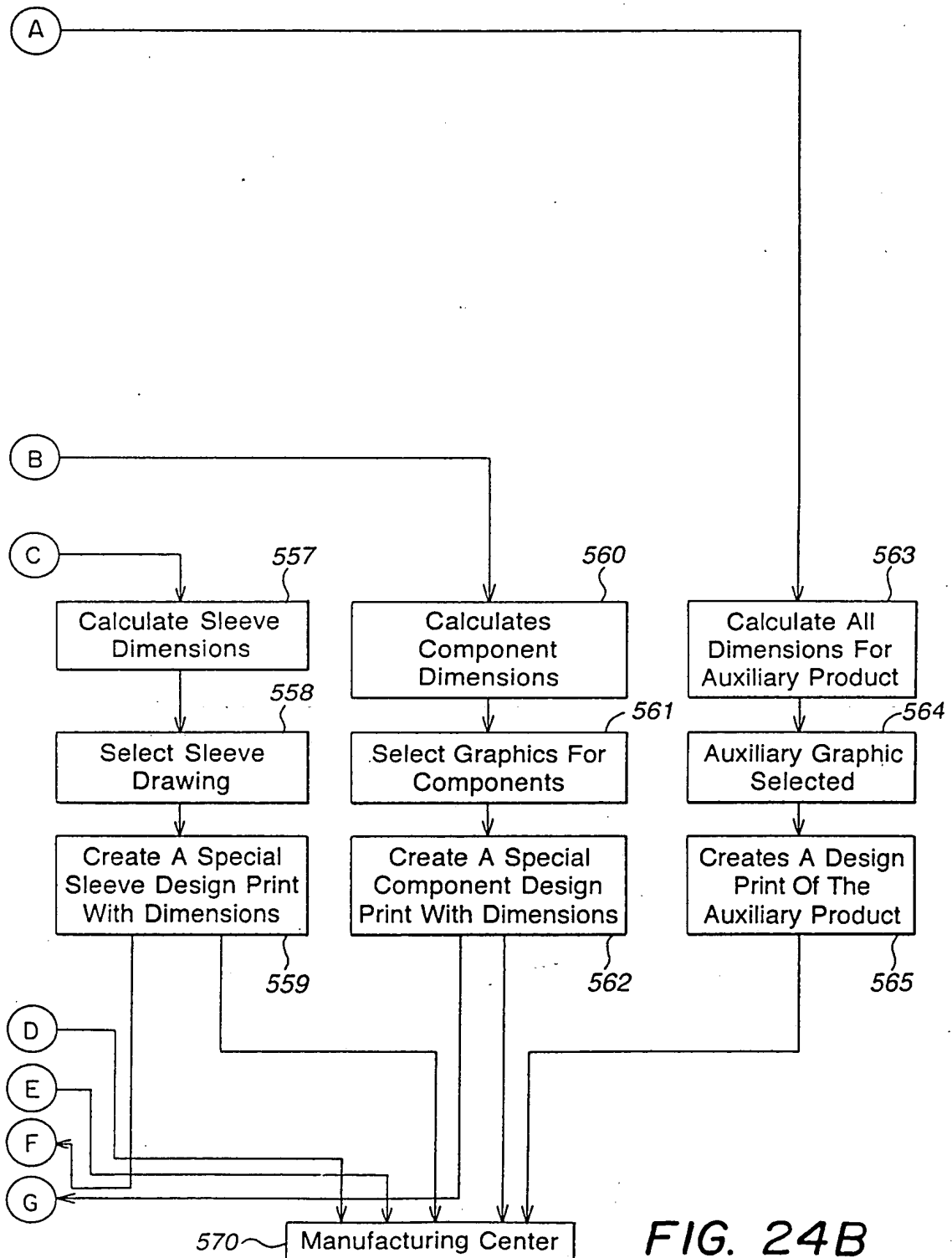


FIG. 24B

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Seal Model	DS Seal Size	Glands 1, and 12 Standard Drawings and Casting "A & B" Materials				Glands 1, 9, and 12 Bar Stock Casting "C & W" Materials Use Standard # if No Bar Drawing			
		A	C	D	F	A	C	D	F
3201	1.125	A1	C1	D1	F1	BarA1	BarC1	BarD1	BarF1
3201	1.375	A1	C1	D1	F1	BarA1	BarC1	BarD1	BarF1
3201	1.750	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	1.875	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.125	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.250	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.375	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.500	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.625	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	2.750	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	3.000	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	3.750	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	4.500	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2
3201	4.75	A2	C2	D2	F2	BarA2	BarC2	BarD2	BarF2

FIG. 25A

Fig. 25A	Fig. 25B
----------	----------

Fig. 25

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**FIG. 25B**

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FIG. 26A

600			601		602		603		604	
Pump ID XXXX			Manufacturer		Model		One Group		Shaft Seal Size Dimension	
	Compatibility Analyzer Results	Description	Dimension Name		Standard Dimension		Modified Dimension			
12			XX						Problem Check	
505C		XXXXXXXXXX	XX							
508C		XXXXXXXXXX	XXXXXX							
509C		XXXXXXXXXX	XXXXXXXX							
511C		XXXXXXXXXX	XXXXXXXX							
			XXXXXXXX							
516C		XXXXXXXXXX	XXXXXX							
504C		XXXXXXXXXX	XX							
			XX							
			XX							
9			XXXXXXXXXX							
514C		XXXXXXXXXX	XXXXXXXX							
517C		XXXXXXXXXX	XXXXXXXX							
518C		XXXXXXXXXX	XXXXXXXX							
4	507C	XXXXXXXXXX								
10	506C	XXXXXXXXXX								



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A Notes 610		N Notes 611		Dimension Type	
				A = No Problems B = Verify 1 dimension - Not 100% sure. C = Verify all dimensions - Receives quote. D = Supply all dimensions - Receive quotes.	
Sleeve					
2	501D	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
3	519D	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
4	520D	XXXXXXXXXX	XXXXXXXXXX		

Delta's Model #s	Alter-nate	Enter Model#	Gland Type	Sleeve Type	Seal Fits Equipment Note1 Note2 Note3 Note4 Note5 Note6 Note7	Equipment Fits Seal Note1 Note2 Note3 Note4 Note5 Note6 Note7
Single - 3000, 3001 3005, 3400, 3700						

Fig. 26A

Fig. 26B

FIG. 26B

Fig. 26

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Bolting Specifications						
Bolting Size	Hex Nut Max Width Across Corners	Hex Nut Width Across Flats	Cap Screw Max Head Diameter	Hex Head Shroud Clearance	Special "S" Slot/Hole Width	Slot Clearance
.25						
.312						
.375						
.437						
.500						
12MM						
.562						
.625						
16MM						
.750						
.875						
1.000						
1.125						
1.250						
1.375						
1.500						
<u>Gasket Surface</u>						626
Size Range			Gasket Surface			
.890-2.520						
2.521-3.020						
3.021-5.020						
5.021-7.500						

**FIG. 27**

**APPARATUS AND METHOD FOR SELECTING  
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Northeast Equipment, Inc.**

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<b>Manufacturers Special Seal Print</b>		<input type="button" value="Return To Standard Proposal"/>	<b>39.0</b>		
GlandType    9		Special Part # Work Order # Checked By:    Date: Approved By:    Date:	Counterbore Gasket Detail 		
<b>For In House Use Only</b>		Slot ID Detail 			
<b>Customer/Order Information</b>  Quote # Date  Customer Information	<b>Pump Information</b>  Pump ID #    XXX Pump Mfg:    XXXXXX Model    XXXXXXXX    Frame/Group    XX Bore Type:    XXXXXXXXXX	<b>Seal Information</b>  Part Number:    XXXXXXXXXX Seal Size:    XXXXXX    Description Features    XXXXXXXX    XXXXXXXXXX Included    XXXXXXXX    XXXXXXXXXX In Gland  Metals: Gland/Sleeve:    XXXXXXXXXX  <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;"> <b>Inboard:</b>            Rotary Face:    XXXXX            Stationary Face: XXXX            Elastomers:    XXX         </td> <td style="width: 50%; padding: 2px;"> <b>Outboard:</b>            Rotary Face:    XX            Stationary Face: XX            Elastomers:    XX         </td> </tr> </table>		<b>Inboard:</b> Rotary Face:    XXXXX Stationary Face: XXXX Elastomers:    XXX	<b>Outboard:</b> Rotary Face:    XX Stationary Face: XX Elastomers:    XX
<b>Inboard:</b> Rotary Face:    XXXXX Stationary Face: XXXX Elastomers:    XXX	<b>Outboard:</b> Rotary Face:    XX Stationary Face: XX Elastomers:    XX				
PO#: _____					

**FIG. 28**

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**Fig. 29A**

**Fig. 29B**

Fig. 29

[illegible]

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3200	2.500
3200	2.625
3200	2.750
3200	3.000
3200	3.250
3200	3.500
3200	3.750
3200	4.000
3200	4.250
3200	4.500

FIG. 29B

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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Fig. 30A(1)

Fig. 30A(2)

**FIG. 30A(1)**

Fig. 30A

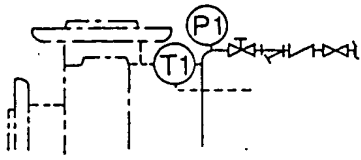
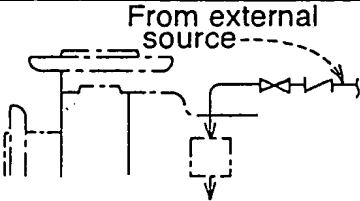
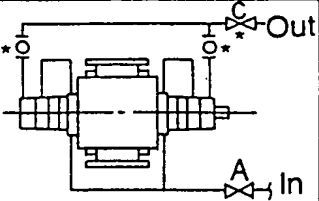
<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> MECHANICAL SEALS </div>	<div style="border-bottom: 1px solid black;">Quote # XXXX</div>	<div style="border-bottom: 1px solid black;">Prepared On:</div>	<div style="border-bottom: 1px solid black;">Valid Until:</div>
	<div style="border-bottom: 1px solid black;">Prepared for:</div>	<div style="border-bottom: 1px solid black;">Prepared by:</div> <div style="border-bottom: 1px solid black;">Your Salesperson's Name Here</div> <div style="border-bottom: 1px solid black;">Your Company Name Here</div> <div style="border-bottom: 1px solid black;">Your Address</div> <div style="border-bottom: 1px solid black;">Your City, State</div> <div style="border-bottom: 1px solid black;">Your Phone (Phone)</div> <div style="border-bottom: 1px solid black;">Your Fax (Fax)</div>	
<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> EQUIP. </div>	<div style="border-bottom: 1px solid black;">Equipment Tag:                      Equipment Serial Number</div>		
	<div style="border-bottom: 1px solid black;">Pump Mfg:                      XXXXXXXXXXXX</div> <div style="border-bottom: 1px solid black;">Pump Model:                      XXXXXXXXXXXXXXXXXXXX</div> <div style="border-bottom: 1px solid black;">Bore Type:                      XXXXXXXXXXXX</div> <div style="border-bottom: 1px solid black;">Sleeve Type:                      XXXXXXXXXXXXXXXX</div> <div style="border-bottom: 1px solid black;">Equipment Type:                      XXXXXXXXXXXXXXXXXXXX</div>		
<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> OPERATING </div>	<div style="border-bottom: 1px solid black;">Process Fluid:                      XXXXXXXXXXXXXXXX                      Specific Gravity:                      XXX</div> <div style="border-bottom: 1px solid black;">Barrier Fluid:                      XXXXXXXXXXXXXXXX                      Suction Pressure</div> <div style="border-bottom: 1px solid black;">Temperature:                      XXXXXXXXXXXXXXXX                      Discharge Pressure</div> <div style="border-bottom: 1px solid black;">Concentration:                      XXXXXXXXXXXXXXXX                      % of Solids Dissolved:                      X</div> <div style="border-bottom: 1px solid black;">Box Pressure:                      XXXXXXXXXXXX                      % of Solids Undissolved:                      XXXXXXXX</div> <div style="border-bottom: 1px solid black;">Seal Size:                      XXXXXXXXXXXX                      XXXXXXXX</div> <div style="border-bottom: 1px solid black;">Shaft Speed:                      XXXXXXXXXXXXXXXX</div> <div style="border-bottom: 1px solid black;">Viscosity:                      XXXXXXXXXXXXXXXX</div>		
	<div style="border-bottom: 1px solid black;">Seal Style:                      XXXXXXXXXXXXXXXX</div> <div style="border-bottom: 1px solid black;">Gland Features:                      XXXXXXXX</div> <div style="border-bottom: 1px solid black;">Part Code:                      XXXXXXXX</div>		
<div style="border: 1px solid black; padding: 2px; transform: rotate(-90deg); transform-origin: center;"> SEAL </div>	<div style="border-bottom: 1px solid black;">Seal Style:                      XXXXXXXXXXXXXXXX</div> <div style="border-bottom: 1px solid black;">Gland Features:                      XXXXXXXX</div> <div style="border-bottom: 1px solid black;">Part Code:                      XXXXXXXX</div>		
	<div style="border-bottom: 1px solid black;">Gland Sleeve:                      XXXXXXXX</div> <div style="border-bottom: 1px solid black;">Inboard:                      XXXXXXXX                      Outboard:</div> <div style="border-bottom: 1px solid black;">Rotary Face:                      XXXXXXXXXXXX                      Rotary Face:                      XXX</div> <div style="border-bottom: 1px solid black;">Stationary Face:                      XXXXXXXXXXXX                      Stationary Face:                      XXXX</div> <div style="border-bottom: 1px solid black;">Elastomers:                      XXXXX                      Elastomers:                      XXX</div>		

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FIG. 30A(2)

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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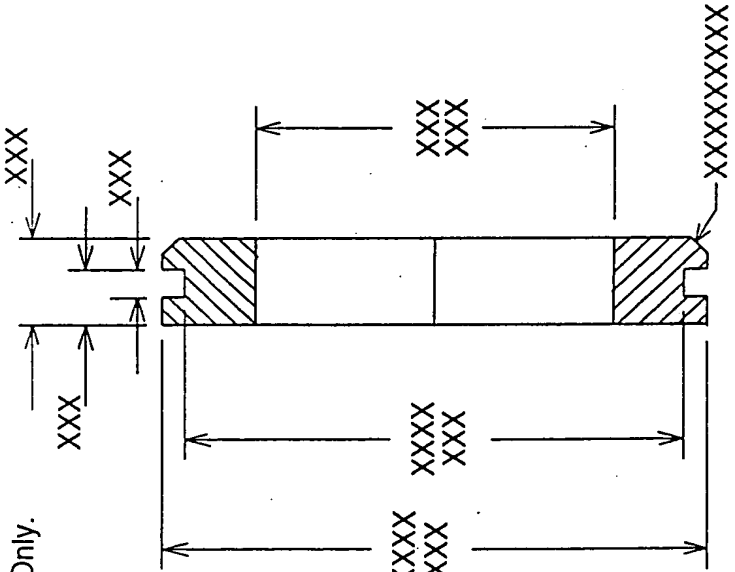
<b>ENVIRONMENTAL CONTROLS</b>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p><b>Plan 32</b> Injection to seal from external source of clean fluid into process fluid.</p> </div> <div style="text-align: center;">  <p><b>Plan 96</b> External fluid quench (steam only).</p> </div> <div style="text-align: center;">  <p><b>Plan E</b> Cooling to bearing housing and stuffing box jacket in series.</p> </div> </div>																																																																	
<b>FLUIDS</b>	<p>Seal chamber pressure must be maintained at minimum 15psi (1bar) above process fluid vapor pressure at pumping temperature to prevent flashing.</p>																																																																	
<b>ADDITIONAL INFORMATION</b>	<p>Verification that the seal chamber will accommodate the throat bushing recommended should be done prior to ordering.</p>																																																																	
<b>ORDER INFORMATION</b>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Qty.</th><th style="width:20%;">Part Number</th><th style="width:30%;">Description</th><th style="width:15%;">List Price</th><th style="width:25%;">Price</th></tr> </thead> <tbody> <tr> <td align="center">X</td><td>XXXXXXXXXX</td><td>XXXXXXXXXXXXX XXXXXXXXXX</td><td>XXXXXXXX</td><td>XXXXXXXX</td></tr> <tr> <td></td><td>XXXXXXXX</td><td>XXXXXXXXXXXXX</td><td></td><td>XXXXXXXX</td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr> <td align="center">X</td><td>XXXXXXXXXX</td><td>XXXXXXXXXX</td><td>XXXXXXXX</td><td>XXXXXXXX</td></tr> <tr> <td align="center">X</td><td>XXXXXXXXXX</td><td>XXXXXXXXXX</td><td>XXXXXXXX</td><td>XXXXXXXX</td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td><td></td></tr> <tr> <td align="center" colspan="2">Quote #</td><td>XXXXXX</td><td>XXXXXX</td><td>QuoteTotal XXXXXX</td></tr> <tr> <td align="center" colspan="2">Delivery</td><td>Discount</td><td>XXX</td><td></td></tr> </tbody> </table> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px; writing-mode: vertical-rl; transform: rotate(180deg);">CHANGE</div> <div> XX  XX  XX </div> </div>	Qty.	Part Number	Description	List Price	Price	X	XXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXX	XXXXXXXX	XXXXXXXX		XXXXXXXX	XXXXXXXXXXXXX		XXXXXXXX																X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXX	XXXXXXXX	X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXX	XXXXXXXX																Quote #		XXXXXX	XXXXXX	QuoteTotal XXXXXX	Delivery		Discount	XXX	
Qty.	Part Number	Description	List Price	Price																																																														
X	XXXXXXXXXX	XXXXXXXXXXXXX XXXXXXXXXX	XXXXXXXX	XXXXXXXX																																																														
	XXXXXXXX	XXXXXXXXXXXXX		XXXXXXXX																																																														
X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXX	XXXXXXXX																																																														
X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXX	XXXXXXXX																																																														
Quote #		XXXXXX	XXXXXX	QuoteTotal XXXXXX																																																														
Delivery		Discount	XXX																																																															

**FIG. 30B**



APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

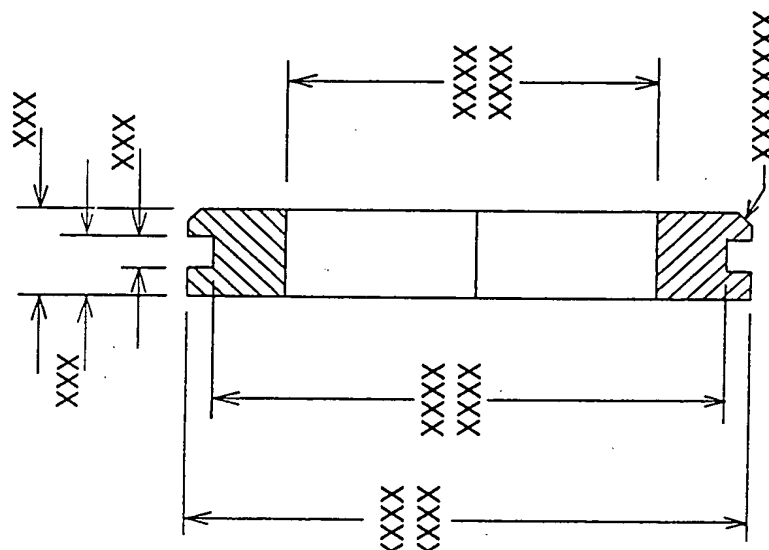
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<b>Manufacturers Special Bushing Print</b>		<b>39.0</b>																														
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><b>For In House Use Only.</b></p>  </div> <div style="width: 65%;"> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2" style="padding: 2px;">Special Part #:</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Work Order #:</td> </tr> <tr> <td style="padding: 2px;">Checked By:</td> <td style="padding: 2px;">Date:</td> </tr> <tr> <td style="padding: 2px;">Approved By:</td> <td style="padding: 2px;">Date:</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Clearances</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Bushing ID .XXX</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Bushing OD .XXX</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Tolerances</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Except as noted</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Decimal XXXXXXXXXX</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Fractional XXXXXXXXXX</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Angular XXXXXXXXXX</td> </tr> <tr> <td colspan="2" style="padding: 2px;">O-Ring Details</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Size-XXX</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Dimensional XXXXXXXXXXXXX</td> </tr> </table> </div> </div>			Special Part #:		Work Order #:		Checked By:	Date:	Approved By:	Date:	Clearances		Bushing ID .XXX		Bushing OD .XXX		Tolerances		Except as noted		Decimal XXXXXXXXXX		Fractional XXXXXXXXXX		Angular XXXXXXXXXX		O-Ring Details		Size-XXX		Dimensional XXXXXXXXXXXXX	
Special Part #:																																
Work Order #:																																
Checked By:	Date:																															
Approved By:	Date:																															
Clearances																																
Bushing ID .XXX																																
Bushing OD .XXX																																
Tolerances																																
Except as noted																																
Decimal XXXXXXXXXX																																
Fractional XXXXXXXXXX																																
Angular XXXXXXXXXX																																
O-Ring Details																																
Size-XXX																																
Dimensional XXXXXXXXXXXXX																																
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;"> <b>Customer/Order Information</b>                   Quote # _____                  Date _____                  Customer Information                  PO #: _____             </td> <td style="width: 50%; padding: 2px;"> <b>Pump Information</b>                   Pump ID #: XXX                  Pump Mfg: XXXXX                  Model: XXXXXXXXXXXXX                  Bore Type: XXXXXXXX                  Frame/Group XXX             </td> </tr> </table>		<b>Customer/Order Information</b>  Quote # _____ Date _____ Customer Information PO #: _____	<b>Pump Information</b>  Pump ID #: XXX Pump Mfg: XXXXX Model: XXXXXXXXXXXXX Bore Type: XXXXXXXX Frame/Group XXX	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"> <b>Bushing Information</b>                   Part Number: XXXXXXXXXXXXX             </td> </tr> </table>	<b>Bushing Information</b>  Part Number: XXXXXXXXXXXXX																											
<b>Customer/Order Information</b>  Quote # _____ Date _____ Customer Information PO #: _____	<b>Pump Information</b>  Pump ID #: XXX Pump Mfg: XXXXX Model: XXXXXXXXXXXXX Bore Type: XXXXXXXX Frame/Group XXX																															
<b>Bushing Information</b>  Part Number: XXXXXXXXXXXXX																																

**FIG. 31**

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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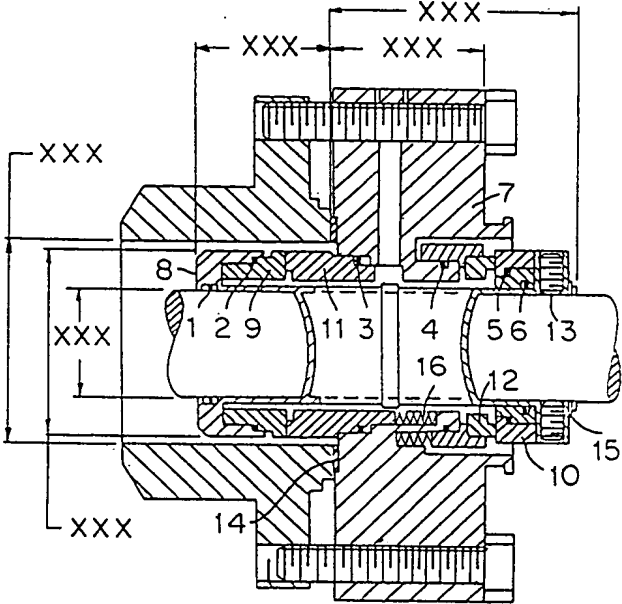
<b>Manufacturers Special Bushing Print For Vendors</b>		<b>39.0</b>				
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Special Part #:</p> <p>Work Order #:</p> <p>Checked By:      Date:</p> <p>Approved By:     Date:</p> </div> <div style="width: 50%; text-align: center;">  </div> </div>		<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Tolerances Except as noted</td> </tr> <tr> <td style="padding: 2px;">Decimal 3 Plcs. XXXX</td> </tr> <tr> <td style="padding: 2px;">Fractional XXXXX</td> </tr> <tr> <td style="padding: 2px;">Angular XXXXXX</td> </tr> </table>	Tolerances Except as noted	Decimal 3 Plcs. XXXX	Fractional XXXXX	Angular XXXXXX
Tolerances Except as noted						
Decimal 3 Plcs. XXXX						
Fractional XXXXX						
Angular XXXXXX						
<p><b>For In House Use Only.</b></p>						
<p><b>Bushing Information</b></p>						
<p>Part Number: XXXXXXXXX</p>		XXXXXXXXXXXXX				
<p>Quote #</p>		XXXXXXXXXXXXX				

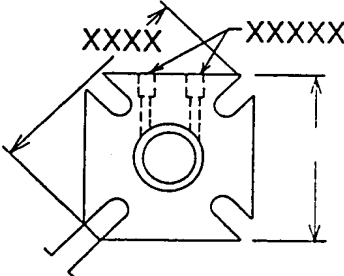
**FIG. 32**

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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Materials Construction			
Item	Description	Material	Part #
1	XXXXXXXXXX	XXXXXX	XXXX
2	XXXXXXXXXX	XXXXXX	XXXX
3	XXXXXXXXXX	XXXXXX	XXXX
4	XXXXXXXXXX	XXXX	XXXX
5	XXXXXXXXXX	XXXXXX	XXXX
6	XXXXXXXXXX	XXXXXX	XXXX
7	XXXXXX	XXXXXX	XXX
8	XXXXXX	XXXX	XXXX
9	XXXXXX	XXXXXX	XXXX
10	XXXXXX	XXXXXX	XXXX
11	XXXXXX	XXXXXX	XXXX
12	XXXXXX	XXX	XXXX
13	XXXXXXXXXX	XXXX	XXXX
14	XXXXXXXXXX	XXX	XXXX
15	XXXXXX	XXXXXX	XXXX
16	XXXXXXXXXX	XXXXXX	XXXX
17	XXXXXX	XXXXXX	XXXX
18			
19			
20			





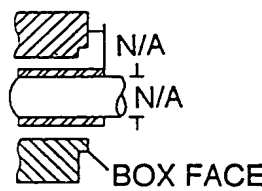
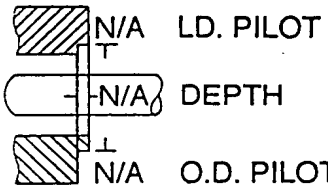
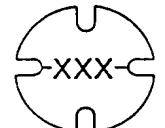
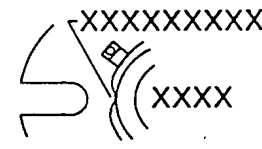
Bolting Information	
Bolts #	X
Bolting Size	XXX
Bolt Spacing	XX
Bolt Circles	

Equipment Modification/Notes/ Equipment Verifications	Customer Information
XXXXXXXXXXXXXXXXXXXX	
	XXXXXX XXX
	Operating Conditions
XXXXXXXXXXXXXXXXXXXX	XXXXXXXX XXXXXXX XXXXXXX
Additional Notes	XXXXXXXX XXXXXXX XXXXXXX
XXXXXXXXXXXXXXXXXXXX	XXXXXXXX XXXXXXX XXXXXXX
XXXXXXXXXXXXXXXXXXXX	Chemical Notes
	XXXXXXXX
XXXXXXXXXXXXXXXXXXXX	
	Environmental Controls
	XXXXXXXXXXXXXXXXXXXX

**FIG. 33A**

APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
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<b>Shaft or Sleeve Extension Detail</b> 		
<b>Pilot Detail</b> 		
<b>Slot ID Detail</b> 	<b>Modified Shroud Detail</b> 	
<b>Seal Information</b>	<b>Quote #</b>	<b>Ref #</b>
XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXX
XXXXXXX	XXXXXXX	
<b>Equipment Information</b>		
XXXXXXXXXXXXXXXXXXXX		
XXXXXXXXXXXXXXXXXXXX		
XXXXXXXXXXXX		
XXXXXXXXXXXXXXXXXXXX		
XXXXXXXXXXXX		
		XXXXX
		XXXXXXXXXX

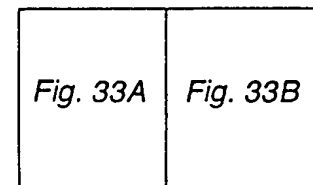


Fig. 33

FIG. 33B

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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Quote #	Prepared On	Valid Until:																																																																			
Bill To:	Ship To:																																																																				
<p>When placing an order, always reference <u>Quote #</u>, <u>Ref. #</u>, and specify <u>Quantity</u>, and <u>all Part Numbers</u> on purchase orders.</p>																																																																					
Mechanical Seal	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">PO Number</th> <th style="width: 85%;">Ship Via</th> </tr> </table>		PO Number	Ship Via																																																																	
	PO Number	Ship Via																																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Qty.</th> <th style="width: 20%;">Part Number</th> <th style="width: 50%;">Description</th> <th style="width: 20%;">Price</th> </tr> </thead> <tbody> <tr> <td align="center">X</td> <td align="center">XXXXXXXXXX</td> <td align="center">XXXXXXXXXXXXXXXXXXXX XXXXXX</td> <td align="center">XXXXXX</td> </tr> <tr> <td></td> <td align="center">XXXXXXXXXX</td> <td align="center">XXXXXXXXXXXX</td> <td align="center">XXXXXX</td> </tr> <tr> <td></td> <td align="center">XXXXXXXXXX</td> <td align="center">XXXXXXXXXXXX</td> <td align="center">XXXXXX</td> </tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr><td> </td><td></td><td></td><td></td></tr> <tr> <td align="center" colspan="2">Ref 161</td> <td align="center">Delivery</td> <td align="center">Quote Total</td> </tr> <tr> <td></td> <td></td> <td></td> <td align="center">XXXXXX</td> </tr> </tbody> </table>		Qty.	Part Number	Description	Price	X	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX XXXXXX	XXXXXX		XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX		XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX																																													Ref 161		Delivery	Quote Total				XXXXXX
Qty.	Part Number	Description	Price																																																																		
X	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX XXXXXX	XXXXXX																																																																		
	XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX																																																																		
	XXXXXXXXXX	XXXXXXXXXXXX	XXXXXX																																																																		
Ref 161		Delivery	Quote Total																																																																		
			XXXXXX																																																																		
Optional Features Included In Each Seal																																																																					
Additional Products																																																																					

Details shown for mechanical seal are for customer's use and are not required when ordering seal.	Gland Features:	XXXXXXXXXXXXXXXXXX XXXXXXXXXXXX		
	Gland/Sleeve:	XXXXXXXXXX		
	Inboard Rotary Face:	XXXXXX	XXX	XX
	Inboard Stationary Face:	XXXXXX	XXX	XX
	Inboard Elastomers:	XXXXXX	XXX	XX

Distributor Your Company Name Here Your Address Your City, State Your Phone (Phone) Your Fax (Fax)	Manufacturer    Your Zip
---	--------------------------------------

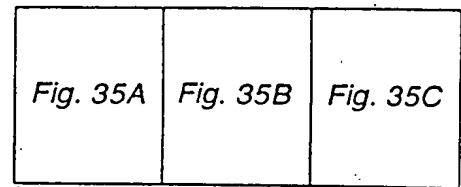
XXXXXXXXXXXXXXXXXXXXXXXXXXXX

**FIG. 34**

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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<b>Q U O T E</b>	Quote # Quote Date Gland Type XXXX Sleeve Type XXXX Part Code XXXXX XXXX												
<b>E Q U I P M E N T</b>	PumpID XXXX Manufacturer XXXXXXXXXXXX Model XXXXX BoreType XXXXXXXXXXXX SleeveType XXXXXXXXXXXX Pump Sizes Frame Group XXXXXX												
Equipment Drawing													
Design Approved By:													
<b>D I M E N S I O N</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">Ds Seal Size</th> <th style="width: 15%;">D1 Sleeve OD</th> <th colspan="2" style="width: 70%;">D2 Box Bore</th> </tr> <tr> <td></td> <td></td> <th style="width: 35%;">Min</th> <th style="width: 35%;">Max</th> </tr> <tr> <td>XXX</td> <td>XXXX</td> <td>XXXXXX</td> <td></td> </tr> </table>	Ds Seal Size	D1 Sleeve OD	D2 Box Bore				Min	Max	XXX	XXXX	XXXXXX	
Ds Seal Size	D1 Sleeve OD	D2 Box Bore											
		Min	Max										
XXX	XXXX	XXXXXX											
Analysis	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">?</td> <td style="width: 15%; text-align: center;">?</td> <td colspan="2" style="width: 70%; text-align: center;">?</td> </tr> </table>	?	?	?									
?	?	?											
<b>E Q U I P M E N T S</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">A Seal Size</th> <th style="width: 15%;">N ID Pilot</th> <th style="width: 15%;">F Pilot Depth</th> <th style="width: 15%;">E OD Pilot</th> <th style="width: 40%;">C Bore</th> </tr> <tr> <td>XXX</td> <td>XX</td> <td>XXX</td> <td>XXX</td> <td>XXX</td> </tr> </table>	A Seal Size	N ID Pilot	F Pilot Depth	E OD Pilot	C Bore	XXX	XX	XXX	XXX	XXX		
A Seal Size	N ID Pilot	F Pilot Depth	E OD Pilot	C Bore									
XXX	XX	XXX	XXX	XXX									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">XXXXXXX XXXXXXX</td> <td style="width: 60%; text-align: center;">Verify      Verify</td> </tr> </table>		XXXXXXX XXXXXXX	Verify      Verify										
XXXXXXX XXXXXXX	Verify      Verify												



*Fig. 35*

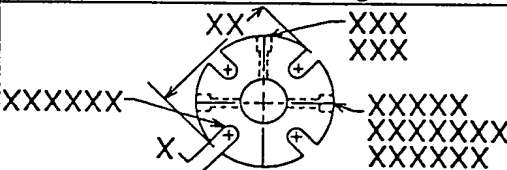
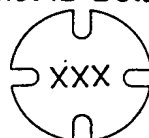
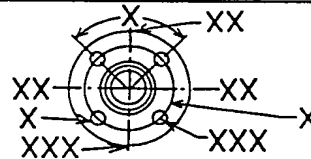
**FIG. 35A**

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FIG. 35B

**APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.**

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		<b>RES-INFO</b>		Your Company Name Here Your Address Your City, State                      Your Zip Your Phone                              (Phone) Your Fax                                      (Fax)					
		<b>EQUIPMENT</b>		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX <div style="border: 1px solid black; height: 20px; width: 100%; margin: 5px 0;"></div> XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					
Special Details				Seal Drawing					
Slot ID Detail									
									
						Equipment Drawing			
Counterbore									
		XXXX XXXX XXXX							
		L2 Inside Length		L3 Gland Length		BOLTING			
						A Min. Bolt Circle By Stud Size		S Slot Width	
						XX	XXX	XX	XX
		XX	XXX						XXX
?		?	?	?					
G Sleeve Extend From Face	B Sleeve Steps To Shaft Size	D Depth		U Bolts#	S Bolt Spacing	Q Bolting Size	R Bolt Circles	W Horz. Dist.	Z Vert. Dist.
XX	XX	XXXX		XX	XX	XX	XX		
Verify		Verify		Verify					

**FIG. 35C**



APPARATUS AND METHOD FOR SELECTING  
A MECHANICAL SEAL; C. C. Bjornson, et al.;  
Northeast Equipment, Inc.

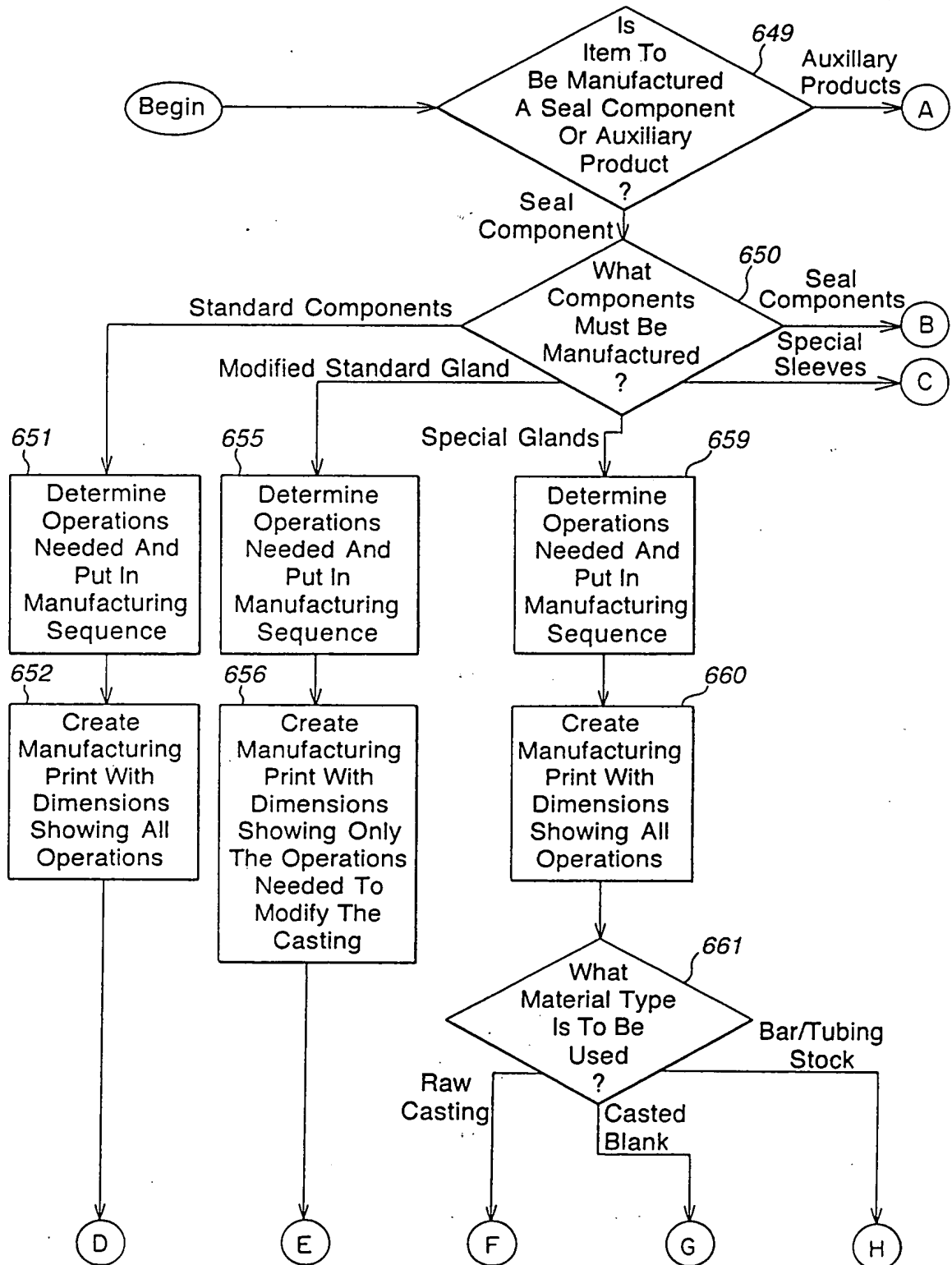
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<input type="button" value="Sort by&lt;br/&gt;Quote Number"/>		<input type="button" value="Print All Bill of Materials"/>		<input type="button" value="Select New Customer"/>							
<input type="button" value="Sort by&lt;br/&gt;Seal Part #"/>		<input type="button" value="Print All Quote Proposals"/>		<input type="button" value="No"/>							
<input type="button" value="Sort by&lt;br/&gt;Pump Mfg/Model"/>				<input type="button" value="Print"/>							
Customer	QuoteID PumpID	Equipment Serial Number	Tag PumpMfg	Model FrameGroup	Pump Size	BoreType	Shaft Speed	Seal Model #	Seal Size	Part Code	Add'l Features
<input type="checkbox"/>	XXXX XXX	XXXXXX X	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX X	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
<input type="checkbox"/>	XXXX XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX

FIG. 36

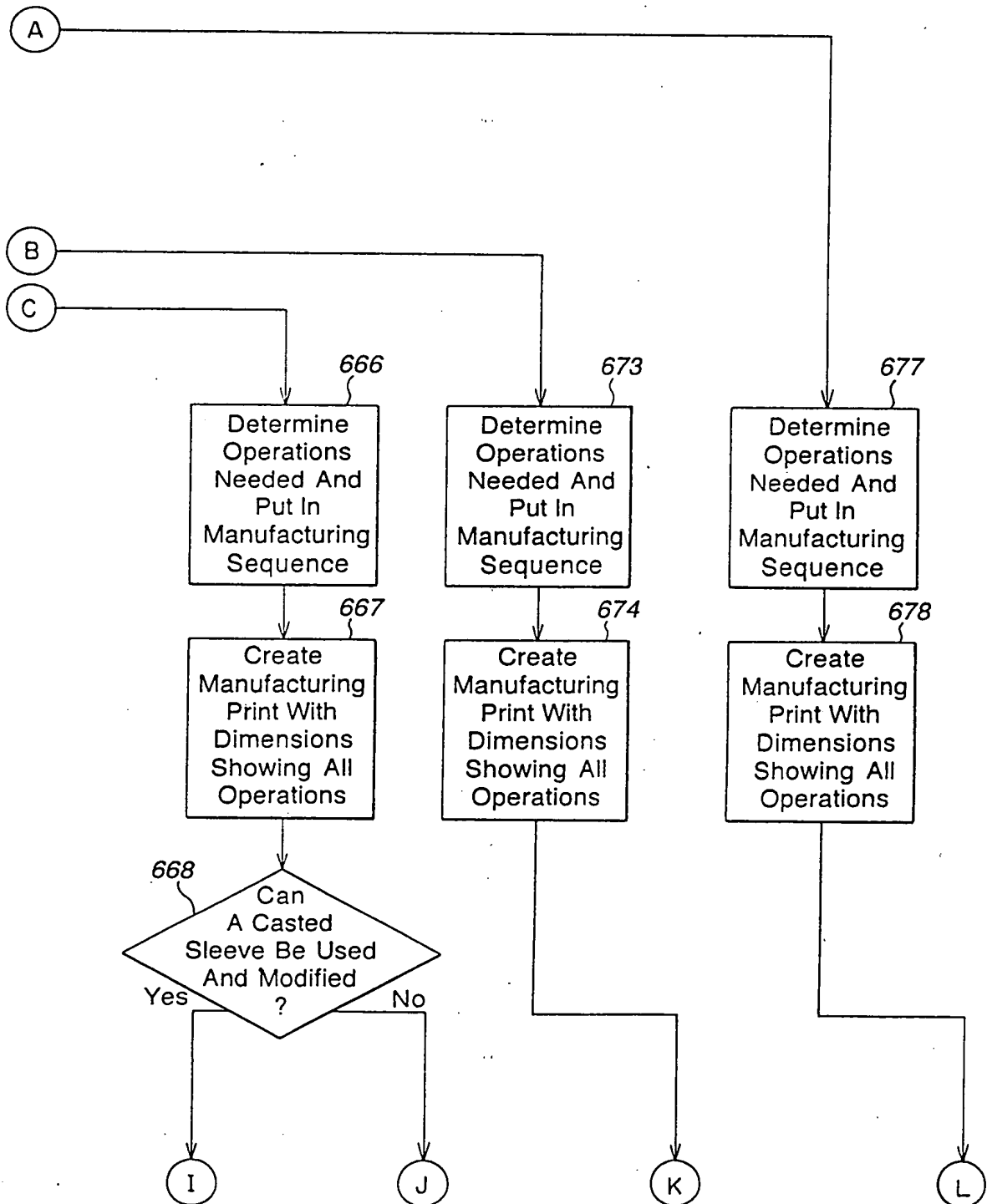
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FIG. 37A

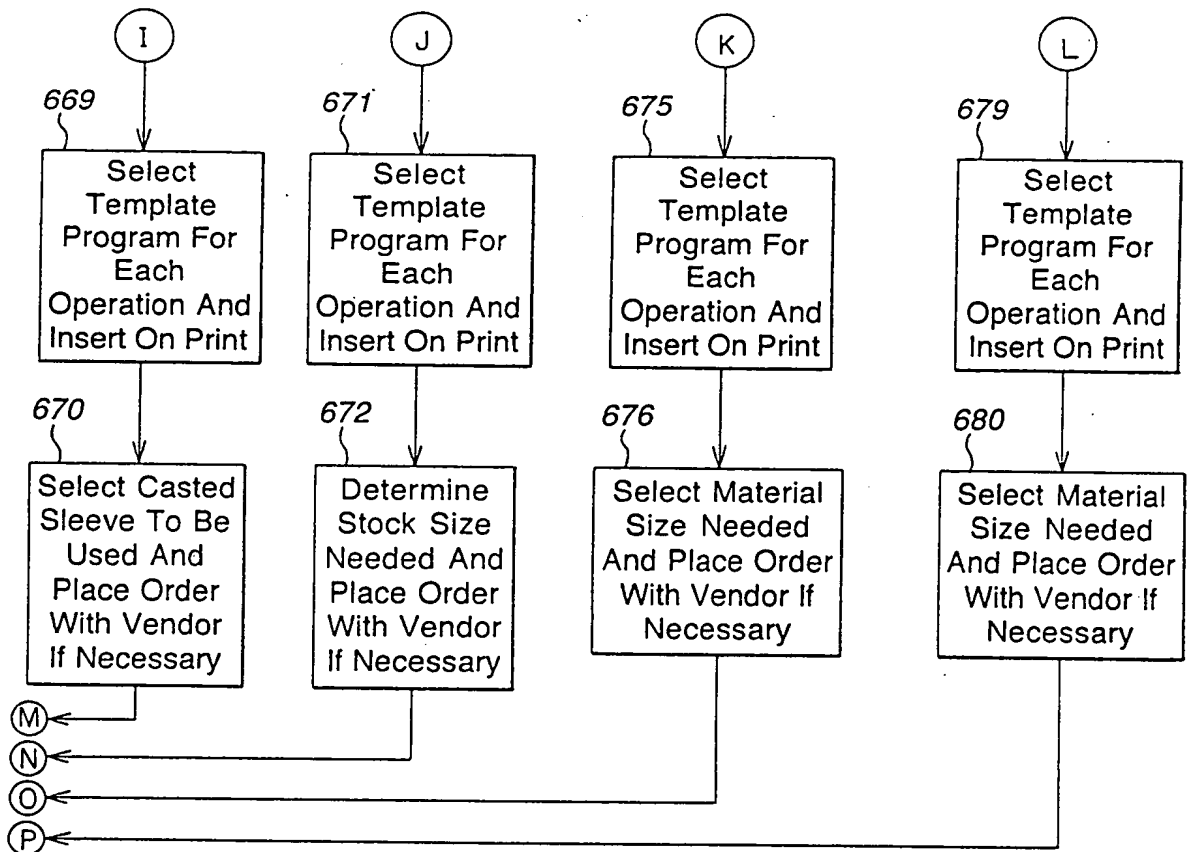


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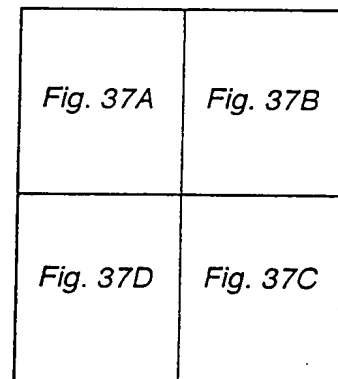
**FIG. 37B**



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**FIG. 37C**



**Fig. 37**

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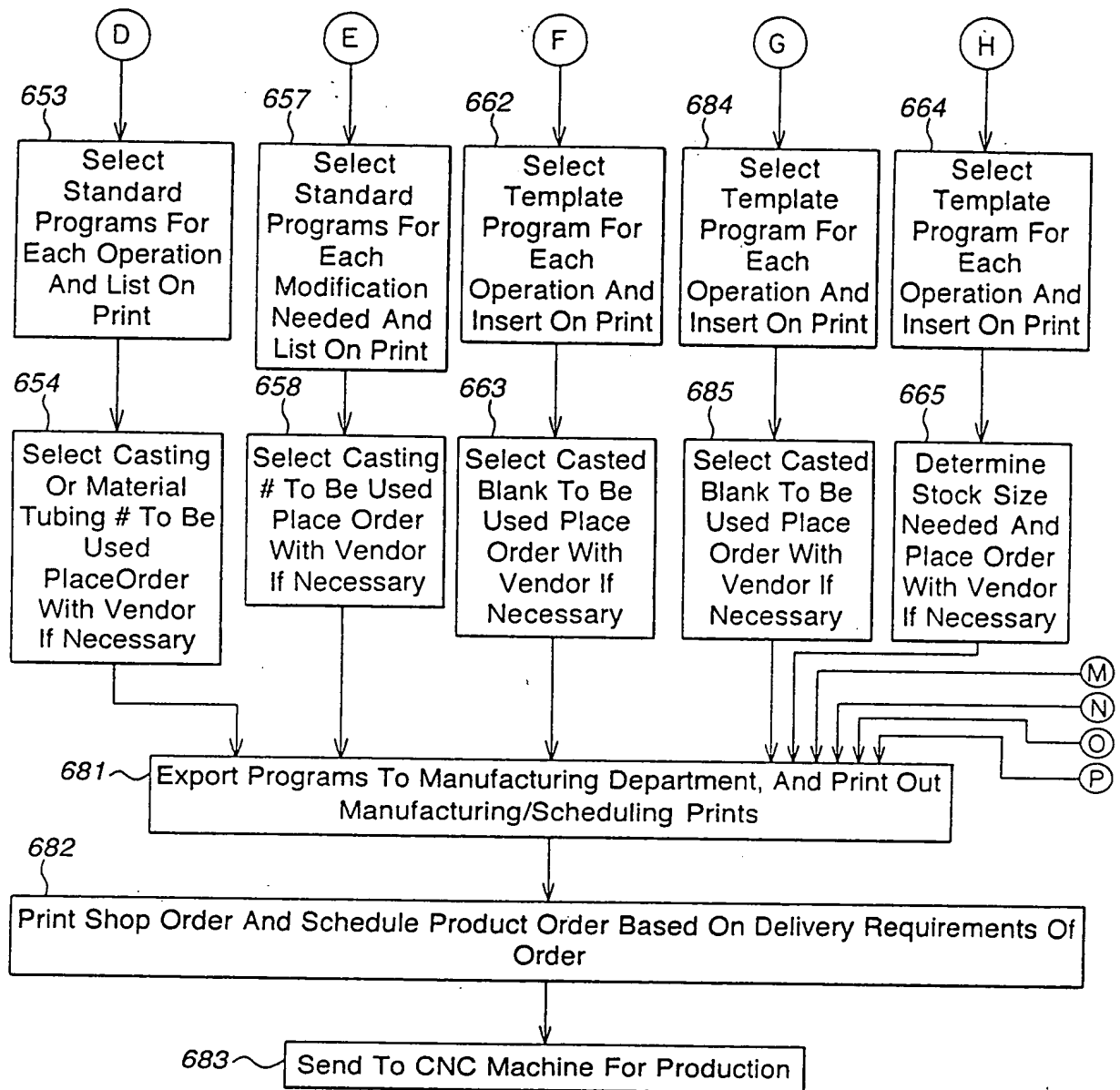


FIG. 37D